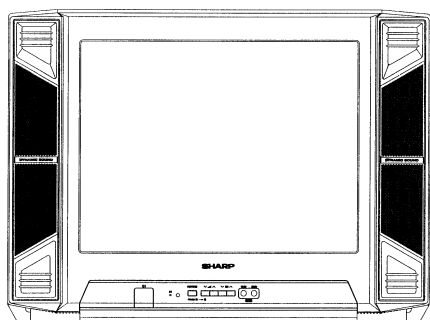


SHARP**SERVICE MANUAL**

SY2U514BM2SMK

**COLOUR TELEVISION*****Chassis No. GA-1AM*****14BM2S_{MK2}**
14BM2G_{MK2}**MODELS**

In the interests of user-safety (Required by safety regulations in some countries) the set should be re-stored to its original condition and only parts identical to those specified should be used.

FEATURES

- Multi 18 systems
- Full Auto Channel Preset and Auto Channel Skip
- 100-CH Program Memory
- CATV(Hyper Band) Ready
<Used Frequency Synthesizer Tuner>
- AVL(Sound Keeper) Function
- Black Stretch Circuit
- On Timer/Sleep Timer/Reminder Timer
- Blue Back Noise Mute
- Front AV-In & Rear AV-In/Out Terminals
(Front Priority)
- Colour Comb Filter(NTSC only)
- High Contrast Picture
- Hotel Mode
- Arabic/Chinese/English/French/Malay/Russian
6 Languages OSD
- White Temperature Adjustment

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WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis. To prevent electric shock, do not remove cover. No user – serviceable parts inside. Refer servicing to qualified service personnel.

SHARP CORPORATION

SPECIFICATIONS

Convergence	Self Convergence System
Focus	Quadra-Potential Electrostatic
Sweep Deflection	Magnetic
Intermediate Frequencies	
Picture IF Carrier	38.9MHz
Sound IF Carrier Frequency	
6.5MHz	32.4MHz
6.0MHz	32.9MHz
5.5MHz	33.4MHz
Colour Sub-Carrier Frequency	34.47MHz
Power Input	110 ~ 240V AC 50/60 Hz
Power Consumption	62W
Audio Power Output Rating	5.0W(at Max.)
Speaker	
Size	5 x 9 cm Elliptic (2 pcs)
Voice Coil Impedance	16 ohms at 400 Hz
Aerial Input Impedance	
VHF/UHF	75 ohms Unbalanced
Receiving System	CCIR SECAM/PAL B, G,D,K,I
Tuner Ranges	
VHF-Channels	E2(48.25MHz) thru E12(224.25MHz) C1(49.75MHz) thru C12(216.25 MHz) S1(105.25MHz) thru S36(423.25HMz)
UHF-Channels	E21(471.25MHz) thru E69(855.25MHz) C13(471.25MHz) thru C57(863.25MHz) S37(431.25MHz) thru S41(463.25MHz)
Dimensions	Width: 496.0mm Height: 355.0mm Depth: 365.0mm Weight(approx): 9.2 kg
Cabinet material	All Plastics

Specifications are subject to change without prior notice.

IMPORTANT SERVICE NOTES

Maintenance and repairing of this receiver should be done by qualified service personnel only.

SERVICE OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by Connecting a 10K ohm Resistor in series with an insulated wire(such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord should be disconnected from AC outlet.)

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely.

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute Minimum. Since certain malfunctions or servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed:

1. When repairing the circuit, be sure not to increase the high voltage to more than 23.7kV(at beam 0 μA) for the set.
2. To keep the set in a normal operation , be sure to make it function on 22.5kV±1.5kV(at beam 800 μA) in the case of the set. The set has been factory - Adjusted to the above-mentioned high voltage.
*If there is a possibility that the high voltage fluctuates as a result of the repairing, never forget to check for such high voltage after the work.
3. Do not substitute a picture tube with unauthorized types and/or brands which may cause excess X-ray radiation.

BEFORE RETURNING THE RECEIVER

Before returning the receiver to the user, perform the following safety Checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor- capacity networks, mechanical insulators etc.

ADJUSTMENT PRECAUTIONS

This model's setting are adjusted in two different ways: through the I²C bus control and in the conventional analog manner. The adjustments via the I²C bus control include preset-only items and variable data.
CAUTION: Make sure TV Set is in "Normal Condition" before switch to Service Mode for adjustment.

1. Setting the service mode by the microprocessor.

- ①. Short JA 137 & JA 138 for 1 second and release to switch to the service mode position, and the microprocessor is in input mode. (Adjustment through the I²C bus control). (Use JWS Key to set as well).
- ②. Press the CH DOWN / UP key on the remote controller to get ready to select the mode one by one.
- ③. Press the CH DOWN / UP key on the remote controller to select the modes reversibly one by one.
- ④. Using the VOLUME UP/ DOWN key on the remote controller, the data can be modified.
- ⑤. Short JA 137 & JA 138 for 1 second and release to switch to the normal mode (OFF) position, and the microprocessor is in out of the service mode.

2. Factory Presetting.

- ①. Short JA 137 & JA 138 then turn "ON" the main power and release to switch to the Service Mode position. Initial values are automatically preset, only when a new EEPROM is used (Judge with the first 4 bytes).
- ②. The initial data are preset as listed in page 8, 9, & 10.
- ③. Make sure the data need modify or not (Initial data).

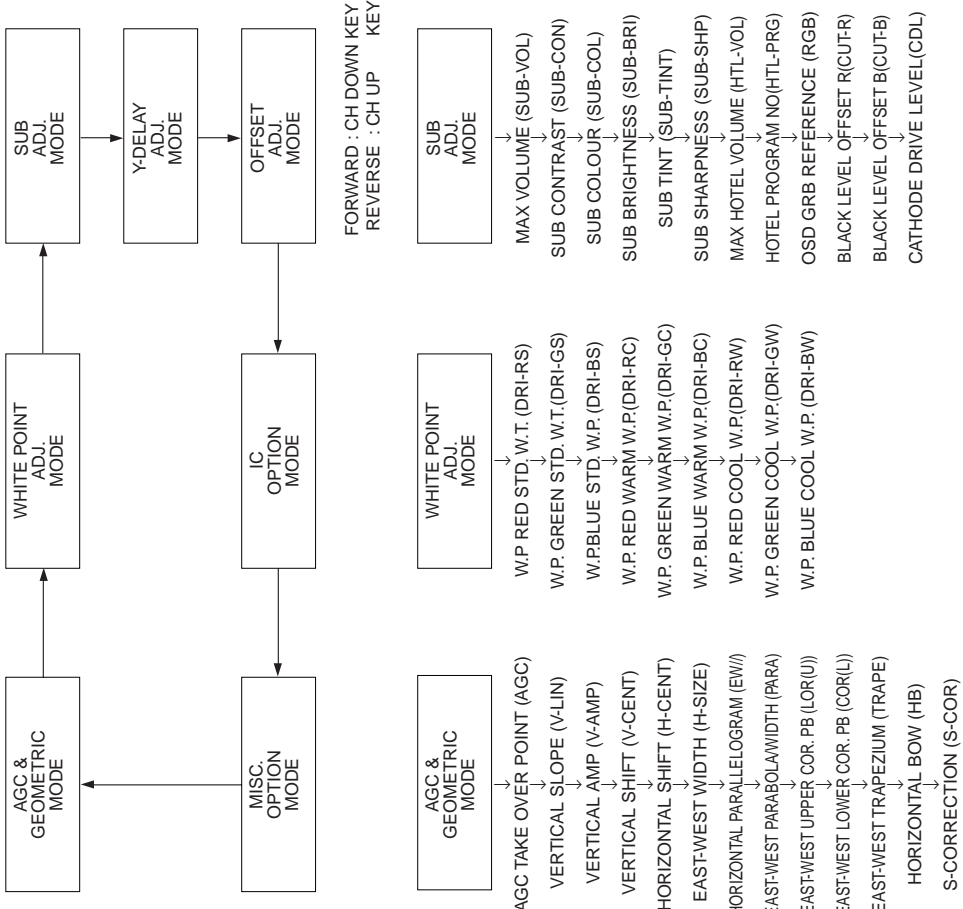
Note: Once the chassis has been assembly together and ready to be POWER ON for the FIRST TIME, make sure to short JA137 & JA138 to switch to the service mode position first and then turn on the main power switch (See 2-(1) above).

Precaution: If haven't done this initiation, it may possibly generate excessive Beam current.

3. For reference please check with memory map (GA-1AM Series type RH-IX3368CE Attachment)

SERVICE MODE

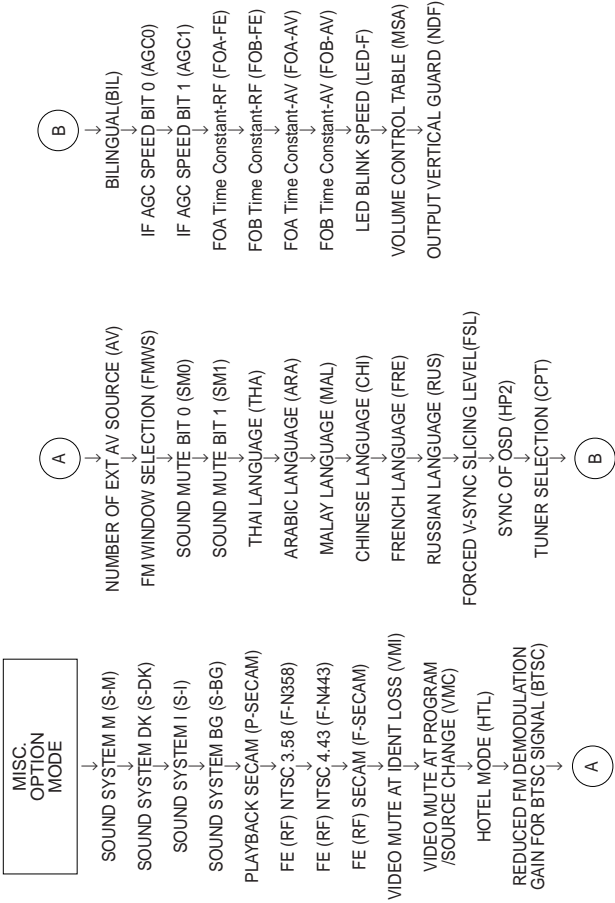
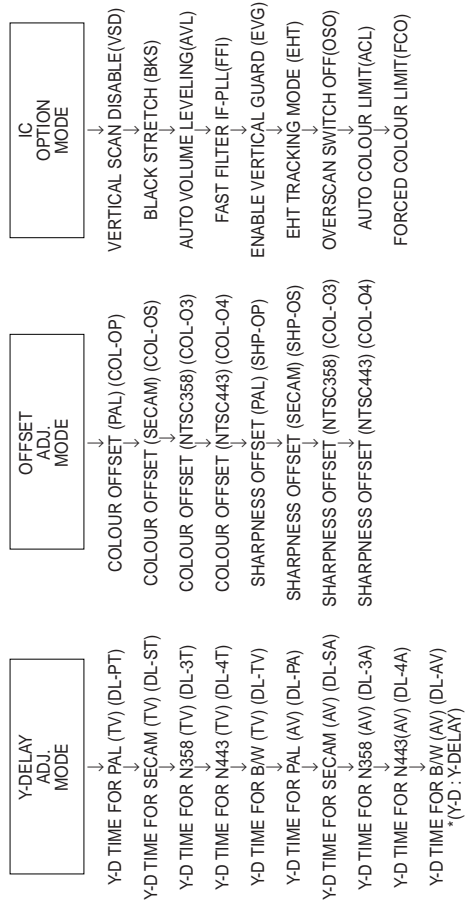
(1) In the Service Mode, Key is used to select the mode in the following order.



FORWARD : CH DOWN KEY
REVERSE : CH UP KEY
* () means OSD display.

RC COMMAND	SERVICE-ITEM
FUNCTION	AGC
CONTRAST DOWN	V-LIN
COLOUR DOWN	V-AMP
BRIGHTNESS DOWN	V-CENT
TINT DOWN	H-CENT
SHARPNESS DOWN	EW / /
SYSTEM	HB
BLUEBACK	S-COR
TIMER	SUB-VOL
CONTRAST UP	SUB-CON
COLOUR UP	SUB-COL
BRIGHTNESS UP	SUB-BRI
TINT UP	SUB-TINT
SHARPNESS UP	SUB-SHP

* Direct Key-in for Service Item in Service Mode



AFTER SHORT JA *37 & JA *38 ,AND TURN ON THE MAIN POWER SWITCH,READ DATA FROM EEPROM ADDRESS 00H ~ 03H,AND COMPARE TO THE LIST BELOW, IF DIFFERENT, INITIALIZE THE EEPROM.

Address : Data
00H : 55H
01H : 4FH

Address : Data
02H : 43H
03H : A1H

EEPROM ITEMS	OSD	DATA LENGTH	INITIAL DATA	FIX/ADJ	REMARK
AGC TAKE OVER POINT	AGC	0-63	14	ADJ	
VERTICAL SLOPE	V-LIN	0-63	32	ADJ	
VERTICAL AMPLITUDE	V-AMP	0-63	32	ADJ	
HORIZONTAL SHIFT	V-CENT	0-63	32	ADJ	
EAST-WEST WIDTH	H-CENT	0-63	32	ADJ	
HORIZONTAL PARALLELOGRAM	H-SIZE	0-63	32	*FIX	
EAST-WEST PARABOLA WIDTH	EW//	0-63	32	*FIX	
EAST-WEST UPPER CORNER PARABOLA	COR (U)	0-63	32	*FIX	
EAST-WEST LOWER CORNER PARABOLA	COR (L)	0-63	32	*FIX	
EAST-WEST TRAPEZIUM	TRAPE	0-63	32	*FIX	
HORIZONTAL BOW	HB	0-63	32	*FIX	
S-CORRECTION	S-COR	0-63	0 (17)	*FIX	
WHITE POINT RED STD WHITE TEMP	DRI-RS	0-63	32	*FIX	
WHITE POINT GREEN STD WHITE TEMP	DRI-GS	0-63	32	ADJ	
WHITE POINT BLUE STD WHITE TEMP	DRI-B	0-63	32	ADJ	
WHITE POINT RED COOL WHITE TEMP	DRI-RS	0-63	25	ADJ	*3
WHITE POINT GREEN COOL WHITE TEMP	DRI-GC	0-63	32	ADJ	(DRI-GS)*7 DATA*3
WHITE POINT BLUE COOL WHITE TEMP	DRI-B	0-63	32	ADJ	SAME AS (DRI-B) DATA
WHITE POINT RED WARM WHITE TEMP	DRI-RW	0-63	32	*FIX	
WHITE POINT GREEN WARM WHITE TEMP	DRI-GW	0-63	32	ADJ	(DRI-GS)*7 DATA
WHITE POINT BLUE WARM WHITE TEMP	DRI-BW	0-63	32	ADJ	(DRI-B) *7 DATA
MAX VOLUME	SUB-VOL	0-63	63	*FIX	
SUB CONTRAST	SUB-CON	0-63	63 (52)	*FIX	
SUB COLOUR	SUB-COL	0-63	32	ADJ	
SUB BRIGHTNESS	SUB-BRI	0-63	32	ADJ	
SUB TINT	SUB-TINT	0-63	32	ADJ	
SUB SHARPNESS	SUB-SHP	0-63	32 (20)	*FIX	
MAX HOTEL VOLUME	HTL-VOL	0-63	32	*FIX	
HOTEL PROGRAM NUMBER	HTL-PRG	0-98 OR 385 FOR NONE	255	*FIX	
OSD GRB REFERENCE	RGB	0-15	15 (6)	*FIX	
BLACK LEVEL OFF-SET R	CUT-R	0-63	32	ADJ	
BLACK LEVEL OFF-SET G	CUT-G	0-63	32	ADJ	
CATHODE DRIVE LEVEL	CDL	0-15	0 (5)	*FIX	
Y-DELAY TIME FOR PAL(TV) [YD]	DL-PT	0-15	12	*FIX	
Y-DELAY TIME FOR SECAM(TV) [YD]	DL-ST	0-15	15	*FIX	
Y-DELAY TIME FOR N358 (TV) [YD]	DL-3T	0-15	12	*FIX	
Y-DELAY TIME FOR N443 (TV) [YD]	DL-4T	0-15	12	*FIX	
Y-DELAY TIME FOR BW (TV) [YD]	DL-TV	0-15	12	*FIX	
Y-DELAY TIME FOR PAL (AV) [YD]	DL-PA	0-15	12	*FIX	
Y-DELAY TIME FOR SECAM (AV) [YD]	DL-SA	0-15	15	*FIX	
Y-DELAY TIME FOR N358 (AV) [YD]	DL-3A	0-15	12	*FIX	
Y-DELAY TIME FOR N443 (AV) [YD]	DL-4A	0-15	12	*FIX	
Y-DELAY TIME FOR BW (AV) [YD]	DL-AV	0-15	12	*FIX	
COLOUR OFFSET (PAL)	COL-OP	0-15	8	ADJ	*6
COLOUR OFFSET (SECAM)	COL-OS	0-15	8	ADJ	*6
COLOUR OFFSET (NTSC358)	COL-O3	0-15	4	ADJ	*6
COLOUR OFFSET (NTSC443)	COL-O4	0-15	4	ADJ	*6
SHARPNESS OFFSET (PAL)	SHP-OP	0-15	8	*FIX	
SHARPNESS OFFSET (SECAM)	SHP-OS	0-15	4	*FIX	
SHARPNESS OFFSET (NTSC358)	SHP-O3	0-15	12 (8)	*FIX	

EEPROM ITEMS	OSD	DATA LENGTH	INITIAL DATA	FIX/ADJ	REMARK
SHARPNESS OFFSET (NTSC443)	SHP-O4	0-15	8	*FIX	
VERTICAL SCAN DISABLE	VSD	0(DISABLE)/1(ENABLE)	0	*FIX	
BLACK STRETCH	BKS	0(DISABLE)/1(ENABLE)	1	*FIX	
AUTOMATIC VOLUME LEVELING	AVL	0(DISABLE)/1(ENABLE)	1	*FIX	
FAST FILTER IF-PLL	FFI	0(DISABLE)/1(ENABLE)	0	*FIX	
ENABLE VERTICAL GUARD (RGB BLANKING)	EVG	0(DISABLE)/1(ENABLE)	1	*FIX	
EHT TRACKING MODE (HCO)	EHT	0(DISABLE)/1(ENABLE)	1	*FIX	
OVERSCAN SWITCH OFF	OSO	0(DISABLE)/1(ENABLE)	0	*FIX	
AUTO COLOUR LIMIT	ACL	0(DISABLE)/1(ENABLE)	0	*FIX	
FORCED COLOUR LIMIT	FCO	0(DISABLE)/1(ENABLE)	0	*FIX	
SOUND SYSTEM M	S-M	0(DISABLE)/1(ENABLE)	0	*FIX	
SOUND SYSTEM DK	S-DK	0(DISABLE)/1(ENABLE)	1	*FIX	
SOUND SYSTEM I	S-I	0(DISABLE)/1(ENABLE)	1	*FIX	
SOUND SYSTEM BG	S-BG	0(DISABLE)/1(ENABLE)	1	*FIX	
PLAYBACK SECAM	P-SECAM	0(DISABLE)/1(ENABLE)	1	*FIX	
FE (RF) NTSC 3.58	F-N358	0(DISABLE)/1(ENABLE)	0	*FIX	
F-N443	F-N443	0(DISABLE)/1(ENABLE)	1	*FIX	
FE (RF) SECAM	F-SECAM	0(DISABLE)/1(ENABLE)	1	*FIX	
VIDEO MUTE AT IDENT LOSS	VMI	0(DISABLE)/1(ENABLE)	1	*FIX	
VIDEO MUTE AT PROGRAM/SOURCE CHANGE	VMC	0(DISABLE)/1(ENABLE)	1	*FIX	
HOTEL MODE	HTL	0(DISABLE)/1(ENABLE)	0	*FIX	
REDUCED FM DEMODULATOR GAIN FOR BTSC SIGNAL	BTSC	0(DISABLE)/1(ENABLE)	0	*FIX	
NUMBER OF EXTERNAL AV SOURCE	AV	0 FORT AV/1 FOR 2AV	1 (0)	*FIX	
FM WINDOW SELECTION	FMWS	0(DISABLE)/1(ENABLE)	0	*FIX	
SOUND MUTE BIT 0	SM0	0(DISABLE)/1(ENABLE)	1	*FIX	
SOUND MUTE BIT 1	SM1	0(DISABLE)/1(ENABLE)	0	*FIX	
THAI LANGUAGE	THA	0(DISABLE)/1(ENABLE)	0	*FIX	
ARABIC LANGUAGE	ARA	0(DISABLE)/1(ENABLE)	1	*FIX	
MALAY LANGUAGE	MAL	0(DISABLE)/1(ENABLE)	1	*FIX	
CHINESE LANGUAGE	CHI	0(DISABLE)/1(ENABLE)	1	*FIX	
FRENCH LANGUAGE	FRE	0(DISABLE)/1(ENABLE)	1	*FIX	
RUSSIAN LANGUAGE	RUS	0(DISABLE)/1(ENABLE)	1	*FIX	
FORCED V-SYNC SLICING LEVEL	FSL	0(DISABLE)/1(ENABLE)	0	*FIX	
SYNC OF OSD	HP2	0(DISABLE)/1(ENABLE)	0	*FIX	
TUNER SELECTION (0:SHARP/PAL/PS;1:MURATA)	CPT	0(DISABLE)/1(ENABLE)	0	*FIX	
BILINGUAL	BIL	0(DISABLE)/1(ENABLE)	0	*FIX	
IF AGC SPEED BIT 0	AGC0	0(DISABLE)/1(ENABLE)	1	*FIX	
IF AGC SPEED BIT 1	AGC1	0(DISABLE)/1(ENABLE)	0	*FIX	
PHI-1 TIME CONSTANT (RF)	FOA-FE	0(DISABLE)/1(ENABLE)	0	*FIX	
PHI-1 TIME CONSTANT (RF)	FOB-FE	0(DISABLE)/1(ENABLE)	0	*FIX	
PHI-1 TIME CONSTANT (OFF AIR)	FOA-AV	0(DISABLE)/1(ENABLE)	1	*FIX	
PHI-1 TIME CONSTANT (OFF AIR)	FOB-AV	0(DISABLE)/1(ENABLE)	1	*FIX	
LED BLINK SPEED	LED_F	0(DISABLE)/1(ENABLE)	0 (1)	*FIX	
VOLUME CONTROL PWM TABLE	MSA	0(DISABLE)/1(ENABLE)	0 (1)	*FIX	
OUTPUT VERTICAL GUARD	NDF	0(DISABLE)/1(ENABLE)	0 (1)	*FIX	

NOTE : 1) *FIX: PLEASE DO NOT CHANGE FIXED DATA WITHOUT SPECIFIC INSTRUCTION.
Please set the EEPROM initial data according to the value in parenthesis () before adjustment.
2) *3: 12300°K DEGREE COLOUR TEMP MINUS 7, DRI-RC=25, DRI-GC=(DRI-GS)-7
18000°K DEGREE COLOUR TEMP MINUS 5, DRI-RC=27, DRI-GC=(DRI-GS)-5
3) *6: ADJUST COLOUR OFFSET AFTER ADJUST SUB-COLOUR.
COLOUR OFFSET (PAL) COL-OP : 8 ----> 14
COLOUR OFFSET (SECAM) COL-OS : 8 ----> 14
COLOUR OFFSET (NTSC358) COL-O3 : 4 ----> 10
COLOUR OFFSET (NTSC443) COL-O4 : 4 ----> 10

INITIAL SETTING

(1). In service mode, After execute select POS 1, store the following tuning data in E²PROM.
Note: All sound system of following channels will be set to B/G after pressing INITIAL KEY 3 or 4.

CH-NO	MCLT		SOUND SYS
	Fv (MHz)		
0	41.10		
1	48.25	B/G	
2	62.25	B/G	
3	77.25	D/K	
4	175.25	B/G	
5	182.25	B/G	
6	183.25	D/K	
7	191.25	D/K	
8	196.25	B/G	
9	199.25	M	
10	210.25	B/G	
11	224.25	B/G	
12	471.25	B/G	
13	487.25	I	
14	503.25	B/G	
15	575.25	B/G	
16	583.25	B/G	
17	599.25	B/G	
18	621.25	M	
19	639.25	D/K	
20	703.25	B/G	
21	735.25	I	
22	767.25	B/G	
23	815.25	B/G	
24	855.25	I	
25	855.25	B/G	
26	55.25	M	
27	83.25	M	
28	183.25	M	
29	193.25	M	
30	217.25	M	
31	471.25	M	
32	477.25	M	
33	693.25	M	
34	41.10		
35	112.25	B/G	
36	168.25	B/G	
37	41.10		
38	294.25	B/G	
39	463.25	B/G	
40	41.10		
41	647.25	B/G	
42	663.25	B/G	
43	679.25	B/G	
44	174.95	B/G	
45	175.55	B/G	
46	41.10		
↓			
99	41.10		

SHIPPING SETTING & CHECKING

(1) The following default data has been factory-set for the E²PROM.

ITEMS	DATA SETTING
LAST PROGRAM/CHANNEL	1
FLASHBACK PROGRAM/CH	1
DIGIT	1
C-SYSTEM	AUTO
S-SYSTEM	*1
SKIP	OFF
AFC	ON
VOLUME	1
CONTRAST	60 (MAX)
COLOUR	0 (CENTER)
BRIGHTNESS	0 (CENTER)
TINT	0 (CENTER)
SHARPNESS	0 (CENTER)
WHITE TEMP	STANDARD
REMINDER TIMER	In-active, "u-v-w-x"
ON TIMER	In-active, "u-v-w-x"
OFF TIMER	In-active, "u-v-w-x"
LAST POWER	POWER-ON
LANGUAGE	*1
BLUE BACK MUTE	ON
HOTEL MODE	OFF
0 CHANNEL SKIP	ON
LAST TV/AV	TV

*1: Please refer defaults for LANGUAGE and SOUND SYSTEM per MODEL as follows,

INITIAL	LANGUAGE	SOUND SYSTEM
3	ENGLISH	B/G
4	ARABIC	B/G

FACTORY SETTINGS BY MODELS (Reference: Geomagnetism Adjustment)

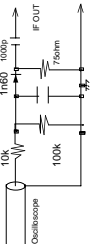
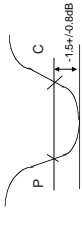
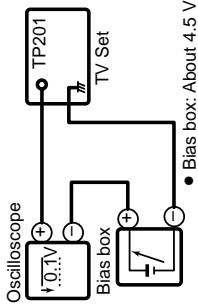
MODEL	Geomagnetism (H,V) nT	Background	Lang.	S-SYS	Lang. QTY
SINGAPORE	"-10,000" "40,000"	12300K	ENGLISH	B/G	6
MID EAST	"30,000" "20,000"	12300K	ARABIC	B/G	6
AFRICA	"-10,000" "40,000"	12300K	ENGLISH	B/G	6

LANGUAGE QTY: ENGLISH/CHINESE/FRENCH/ARABIC/MALAY/RUSSIAN

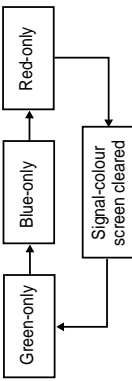
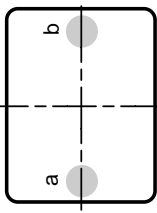
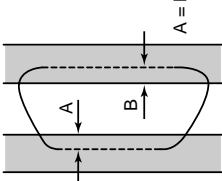
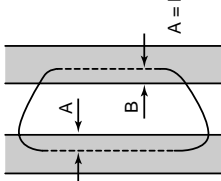
ADJUSTMENT PRECAUTION:

Make sure TV Set is in "Normal Condition" before switch to service mode for adjustment.

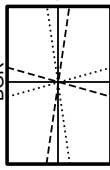
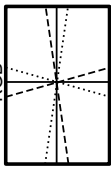
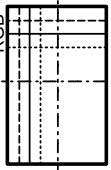
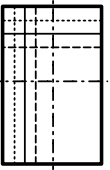
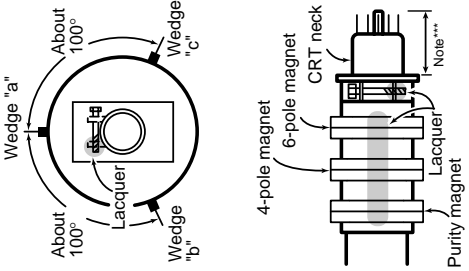
PIF ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	Tuner IFT (PRESET)	<ol style="list-style-type: none"> Get the tuner ready to receive the CH. E - 9 signal, but with no signal input. Adjust the PLL data. Connect the sweep generator's output cable to the tuner antenna. (RF SWEEP) Adjust the sweep generator's to 80dBuV. Connect the response lead (use LOW IMPEDANCE probe with wave detector ; see Fig.1) to the tuner's IF output terminal. (This terminal must have the probe alone connected). Set the RF AGC to 0 - 6 V with no saturation with the waveform. Adjust the tuner IF coil to obtain the waveform as shown in Fig. 2. <p>Note: Be sure to keep the tuner cover in position during this adjustment.</p>	 <p>Fig.1</p>  <p>Fig.2</p>
2	RF-AGC TAKE OVER POINT ADJUSTMENT (IFC BUS CONTROL)	<ol style="list-style-type: none"> Receive "PAL COLOUR BAR" signal. <ul style="list-style-type: none"> Signal Strength: 57 ± 1 dBuV (75 ohm open) Connect the oscilloscope to TP201 (Tuner's AGC Terminal) as shown in Fig. 3.  <p>Fig. 3</p> <ol style="list-style-type: none"> Call "AGC" mode in service mode. Adjust the "AGC" bus data to obtain the Tuner output pin drop 0.1V below maximum voltage. Change the antenna input signal to 63-67dBuV, and make sure there is no noise. Turn up the input signal to 90-95 dBuV to be sure that there is no cross modulation beat. 	<p>Note: For the 50 ohm signal strength gauge, when not using 50/75 impedance adapter, signal strength is 52 ± 1 dBuV (75 ohm open), instead of 57 ± 1 dBuV (75 ohm open).</p> <p>Precaution: The loss of using impedance adapter</p>

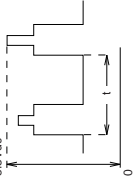
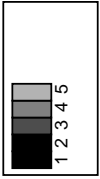
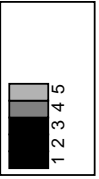
PURITY ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	PURITY ADJ.	<ol style="list-style-type: none"> Receive the GREEN-ONLY signal. Adjust the beam current to about 500 μA. Degauss the CRT enough with the degaussing coil. <p>Note: Follow the Job Instruction Sheet to adjust the magnetic field.</p> <ol style="list-style-type: none"> Maintain the purity magnet at the zero magnetic field and keep the static convergence roughly adjusted. Observe the points a, b as shown in Fig. 4-1 through the microscope. Orient the raster rotation to 0 eastward. Tighten up the deflection coil screws. <ul style="list-style-type: none"> Tightening torque: 108 ± 20 N (11 ± 2 kgf) Make sure the CRT corners landing meet the A rank requirements. If not, stick the magnet sheet to correct it. <p>Note: This adjustment must be done after warming up the unit for 30 minutes or longer with a beam current over 500 μA.</p> <p>* For the following colours press R/C RGB key to change.</p> 	 <p>Fig. 4-1</p>  <p>Fig. 4-2 (on the right of the CRT) Rank "A"</p>  <p>Fig. 4-3 (on the left of the CRT) Rank "A"</p> <p>* Press R/C RGB key for 1 second in NORMAL MODE, the colour will change to RGB mono colour mode.</p> <p>The TEXT Key "R. G. Cy" Key can be directly use to change to other colours screen.</p>

CONVERGENCE ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	CONVERGENCE ADJ. (To be done after the purity adjustment.	<p>1. Receive the "Crosshatch Pattern" signal.</p> <p>2. Using the remote controller, call NORMAL mode.</p> <p>STATIC CONVERGENCE</p> <p>1. Turn the 4-pole magnet to a proper opening angle in order to superpose the blue and red colours.</p> <p>2. Turn the 6-pole magnet to a proper opening angle in order to superpose the green colour over the blue and red colours.</p> <p>DYNAMIC CONVERGENCE</p> <p>1. Adjust the convergence on the fringes of the screen in the following steps.</p> <p>a) Fig. 5-1: Drive the wedge at point "a" and swing the deflection coil upward.</p> <p>b) Fig. 5-2: Drive the wedge at points "b" and "c" and swing the deflection coil downward.</p> <p>c) Fig. 5-3: Drive the "c" wedge deeper and swing the deflection coil rightward.</p> <p>d) Fig. 5-4: Drive the "b" wedge deeper and swing the deflection coil leftward.</p> <p>2. Fix all the wedges on the CRT and apply glass tape over them.</p> <p>3. Apply lacquer to the deflection yoke lock screw, magnet unit (purity, 4-pole, 6-pole magnets) and magnet unit lock screw.</p> <p>Finally received the Red-only and Blue-only signals to make sure there is no other colours on the screen.</p>	<div><p>Fig. 5-1</p></div> <div><p>Fig. 5-2</p></div> <div><p>Fig. 5-3</p></div> <div><p>Fig. 5-4</p></div> <div><p>Wedge "a" About 100° Wedge "b" About 100° Wedge "c" Note***</p><p>4-pole magnet 6-pole magnet CRT neck Lacquer Purity magnet</p></div>

CRT CUT-OFF, BACKGROUND AND SUB-CONTRAST ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	CRT CUTOFF ADJUSTMENT (I ² C BUS CONTROL)	<p>Remark</p> <p>1. Before CRT cutoff adjustment, SUB-BRIGHT, DRI-RS/RW/RC, DRI-GS/GW/GC, DRI-BS/BW/BC, CUT-R and CUT-G must be INITIAL DATA.</p> <p>2. CRT Cutoff adjustment must be done inside a dark room.</p> <p>1. Switch TV to VIDEO mode, BLUE BACK OFF, with NO VIDEO signal.</p> <p>2. Press R/C to set Picture Normal condition.</p> <p>3. First, off the screen by adjust screen variable resistor.</p> <p>*4. Next, checking AKB circuit function by slowly increase screen variable resistor until colour raster suddenly on and off (AKB start function).</p> <p>5. Then continue adjust until retrace line appear.</p> <p>6. Finally, slowly decrease the screen variable resistor until screen retrace line cut off. (Not Raster)</p> <p>Note :</p> <p>Must confirm the AKB function in set before continue the next adjustment.</p>	<p>*Alternative Procedure</p> <p>(1) Step (1), (2), (3) and (4) are same as beside procedure.</p> <p>(2) Then continue adjust until retrace line appear and make sure the colour appear whether red, green or blue.</p> <p>(3) Connect the oscilloscope to related test points as below which is based on colour appear at (2) RED = TP47R, GREEN = TP47G, BLUE = TP47B.</p> <p>(4) Then adjust Screen VR until the tip of signal reach 3.3Vdc.</p> <div></div>
2	SUB-BRIGHTNESS ADJUSTMENT (I ² C BUS CONTROL)	<p>1. Call " SUB-BRI" in service mode. (Receive Cross-hatch pattern with 5 black level windows)</p> <p>*2) Adjust the " SUB BRIGHT " bus data in order that the line 1and 2 have the same darkness whereas line 3 is one step (data) brighter than line 2. Finally data minus 1 to make line 1, 2, and 3 are in same level (darkness).</p>	<div></div> <p>Line 3 is one step (data) brighter than line 2</p> <div></div>
3	WHITE BALANCE SERVICE ADJ. (I ² C BUS CONTROL)	<p>1. Receive the "WHITE" pattern with BURST signal.</p> <p>2. Press R/C to set Picture NORMAL condition.</p> <p>3. Connect the DC milliammeter between TP602 (-) TP603 (+).</p> <p>4. Check Beam current should be around 800 μA.</p> <p>5. Set it to service mode and adjust the DRI-GS, & DRI-BS data to have a colour temperature of 12300°K or 18000°K (white). * Note :</p> <p>6. Receive "WHITE" pattern, WITH BURST signal, and set BRIGHTNESS Y by generator, to **10 cd/m2 (MINOLTA CA-100) by reducing LUMINATE Y signal.</p> <p>7. Adjust "CUT-R" & "CUT-G" to get desired colour temperature #. Then go back NORMAL mode (HIGH BRIGHT**) to check colour temperature. If out of range, back to (1).</p> <p>Note: This adjustment must be done after warming up the unit for 30 minutes or longer with a beam current over 500μA.</p> <p>* ADJUST DRI-GC/GW, DRI-BC/BW as following DATA, after finishing DRI-BS and DRI-GS DATA ADJUSTMENT.</p> <p>DRI-RW = 32 (FIXED), DRI-RS = 32 (FIXED) DRI-BC = "DRI-BS" (For 12300°K And 18000°K Condition)</p>	<p># 12300°K X : 0.272 Y : 0.275</p> <p># 18000°K X : 0.255 Y : 0.255</p> <p>(MINOLTA COLOUR ANALYZER CA-100)</p> <p>*Note: Above Data can be UP/DOWN by Volume key.</p> <p>LOW HIGH 14" 10cd/m2 200cd/m2</p> <p>* 12300°K DRI-GW="DRI-GS"-7 DRI-BW="DRI-BS"-7 DRI-GC="DRI-GS"-7 DRI-RC=25</p> <p>* 18000°K DRI-GW="DRI-GS"-7 DRI-BW="DRI-BS"-7 DRI-GC="DRI-GS"-5 DRI-RC=27</p>

CRT CUT-OFF, BACKGROUND AND SUB-CONTRAST ADJUSTMENT

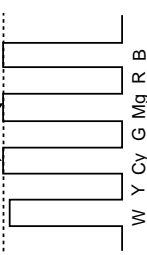
(Continued)

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
4	Max beam check	<ol style="list-style-type: none"> 1. Receive the "Monoscope Pattern" signal. 2. Press R/C to set Picture NORMAL condition. 3. Connect the DC milliammeter between TP603 (+) & TP602 (-). 4. Beam current must be within $800 \pm 100 \mu\text{A}$. (14") 	

HORIZONTAL AND VERTICAL DEFLECTION LOOP ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	V-SLOPE (f°C BUS CONTROL)	<ol style="list-style-type: none"> 1. Receive Monoscope Pattern Signal. 2. Call the "V-LIN" mode. 3. Increase or decrease "V-LIN" by Volume key till the horizontal line in the center of monoscope is just at the position where the blanking starts. 	
2	V-SHIFT-50 (f°C BUS CONTROL)	<ol style="list-style-type: none"> 1. Call the "V-CENT" mode. 2. Increase or decrease "V-CENT" by Volume key till the picture is centered. 	
3	V-AMP50 (f°C BUS CONTROL)	<ol style="list-style-type: none"> 1. Call the "V-AMP" mode. 2. Increase or decrease "V-AMP" by Volume key to set overscan of 9.5% typical. 	
4	H-SHIFT (50) (H-CENTER)	<ol style="list-style-type: none"> 1. Call the "H-CENT" mode. 2. Increase or decrease "H-CENT" by Volume key to center the picture horizontal. 	
5	S-CORRECTION (f°C BUS CONTROL)	<ol style="list-style-type: none"> 1. SET DATA TO 17. * Check the E-5 CH Monoscope Pattern then re-adjust V-Slope, V-Shift and V-Amp to make sure adjustment is in acceptable Ring-Shaped. 	
6	SUB-SHARPNESS	<ol style="list-style-type: none"> 1. SET DATA TO 20. 	
1	Focus	<ol style="list-style-type: none"> 1. Receive the "Monoscope Pattern" signal. 2. Press R/C to set Picture NORMAL condition. 3. Adjust the focus control to get the best focusing. 	

NTSC CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	SUB-TINT (f°C BUS CONTROL)	<ol style="list-style-type: none"> 1. Receive the "NTSC 3.58 Colour Bar" signal thru AV in. 2. Connect the oscilloscope to TP47B (P882 pin 5) BLUE-OUT. <ul style="list-style-type: none"> • Range : 100mV/div. (AC)(Use Probe 10:1) • Sweep time : 10 $\mu\text{sec/div}$. 3. Call the "SUB-TINT" mode in service mode. Adjust the "SUB-TINT" bus data to obtain the waveform shown as Fig. 1-1. 4. Clear the SERVICE mode. 	 <p>W Y Cy G Mg R B Fig. 1-1</p>

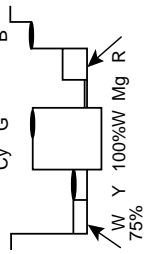
PROTECTOR OPERATION CHECKING

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	BEAM PROTECTOR	<ol style="list-style-type: none"> 1. Receive "Monoscope Pattern" signal. 2. Set CONTRAST MAX. 3. Set BRIGHT MAX. 4. During the Collector & Emitter of Q883/5/7 short, make sure the protector ON and switch to standby mode. 	* Select one of Q883/5/7 to do each short test.
2	HV PROTECTOR	<ol style="list-style-type: none"> 1. Receive "Monoscope Pattern" signal. 2. Connect output of Bias Box to D603 cathode (R610 side). 3. Set voltage of Bias Box to 18V and make sure the protector is not work. 4. Set voltage of Bias Box to 27V, and make sure the protector is work. 	
3	Other protectors	<ol style="list-style-type: none"> 1. Once finish rectified Electrolytic Capacitor short testing in +B line, check all possible damaged components on +B line. 	(Use random selected set for inspection)

AV INPUT AND OUTPUT CHECKING

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	VIDEO AND AUDIO OUTPUT CHECK	<ol style="list-style-type: none"> 1. Receive the "PAL Color Bar" signal (100% White Color Bar, Sound 400 Hz 100% Mod). 2. Terminate the Video output with a 75 ohm impedance. Make sure the output is as specified (1.0 Vp-p ± 3 dB). 3. Terminate the Audio output with a 10k ohm impedance. Make sure the O/P is as specified (1.76 Vp-p ± 3 dB). 	
2	VIDEO AND AUDIO INPUT CHECK	<ol style="list-style-type: none"> 1. Using the TV/AV key on the remote controller, make sure that the modes change in order of TV, AV & TV again and the video & audio output are according to the input terminal for each mode. If connect input to Front and Rear AV terminal, input terminal of Front AV will be selected. 	

PAL CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	SUB COLOUR (f°C BUS CONTROL)	<ol style="list-style-type: none"> 1. Receive the "PAL Colour Bar" signal. 2. Press R/C to set Picture Normal condition. 3. Connect the oscilloscope to Red cathode(D881 Cathode). <ul style="list-style-type: none"> • Range : 20 V/div. (AC) (Using 10:1 probe) • Sweep time : 10 $\mu\text{sec/div}$. 4. Using the R/C call "SUB COL" in SERVICE mode. Adjust SUB COLOUR bus data, so that the 75% White & Red portions of PAL Color Bar be at the same level shown as Fig. 1-1. 5. Clear the SERVICE mode. 	 <p>W Y 75% Cy G B Mg R Fig. 1-1</p>

FUNCTION OPERATION CHECKING (VIDEO AND AUDIO)

(Continued)

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
9	COLOUR SYSTEM	1. Receive the "PAL COLOUR BAR" signal, press the COLOUR SYSTEM key to select modes except PAL, check the COLOUR is not working properly. Then, select the "PAL" mode. Check again its colour so that it is working properly. 2. Receive "SECAM COLOUR BAR" signal, press COLOUR SYSTEM key to select modes except SECAM, check the COLOUR is not working properly. Then, select the "SECAM" mode. Check again its colour so that it is working properly. 3. Receive "NTSC 4.43/3.58 COLOUR BAR" signal thru AV, press COLOUR SYSTEM key to select modes except N4.43/3.58, check the COLOUR is not working properly. Then, select the "NTSC 4.43/3.58" mode. Check again its colour so that it is working properly.	
10	SOUND SYSTEM	1. Receive "PAL-D/K" signal, press the "SOUND SYSTEM" to select B/G, I. Check the sound output is not working properly. Select D/K and check the sound output to make sure it is working properly. 2. Receive "PAL-I" signal, press the "SOUND SYSTEM" to select B/G, D/K. Check the sound output is not working properly. Select I and check the sound output to make sure it is working properly. 3. Receive "PAL-B/G" signal, press the "SOUND SYSTEM" to select I, D/K. Check the sound output is not working properly. Select B/G and check the sound output to make sure it is working properly.	
11	NOISE MUTE CHECKING	1. Receive "PAL COLOUR BAR" signal. 2. Turn up the volume control to maximum, make sure the sound is heard from the speakers. Then put the unit in no signal state. 3. Check the sound mute is effective. 4. Finally turn sound level of CTV to minimum.	
12	OSD LANGUAGE QUANTITY CHECK	Check OSD LANGUAGE quantity and type as English, Russian, Chinese, French, Arabic and Malay.	

FUNCTION OPERATION CHECKING (VIDEO AND AUDIO)

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	CONTRAST key	1. Receive "Monoscope Pattern" signal. 2. Set P-Mode to select CONTRAST. 3. Press Volume Up/Down key to check whether the CONTRAST effect is OK or not.	
2	COLOUR key	1. Receive "Color Bar" signal. 2. Set P-Mode to select COLOUR. 3. Press Volume Up/Down key to check whether the COLOUR effect is OK or not.	
3	BRIGHTNESS key	1. Receive "Monoscope Pattern" signal. 2. Set P-Mode to select BRIGHTNESS. 3. Press Volume Up/Down key to check whether the BRIGHTNESS effect is OK or not.	
4	TINT key	1. Receive the "NTSC Colour Bar" signal thru AV in. 2. Set P-Mode to select TINT. 3. Press Volume Up/Down key to check TINT, UP for GREEN direction and DOWN for PURPLE direction whether is OK or not.	
5	SHARPNESS Key	1. Receive "Monoscope Pattern" signal. 2. Set P-mode to select SHARPNESS. 3. Press Volume Up/Down key to check whether the SHARPNESS effect is OK or not.	
6	CH DISPLAY COLOUR	1. All Ch (1~99) will have an OSD display of the channel number in green colour under AFT ON condition.	
7	NORMAL Key	1. Once in PICTURE Mode, and the NORMAL key is pressed, all the settings will be present to normal setting. (Normal setting value for every mode). ● CONTRAST : MAX ● COLOUR : CENTER ● BRIGHTNESS : CENTER ● TINT : CENTER ● SHARPNESS : CENTER	Notes: If nothing is display mean contrast, colour, bright, tint, sharpness are all in normal setting.
8	WHITE TEMP	1. Receive "Monoscope Pattern" signal. 2. Set FUNCTION to select WHITE TEMP. 3. Press Volume Up/Down key to check WHITE TEMP Option, STANDARD: NORMAL SETTING, WARM for more REDDISH direction changing, COOL for more BLUISH direction changing.	

14BM2SMK2
14BM2GMK2

11-2

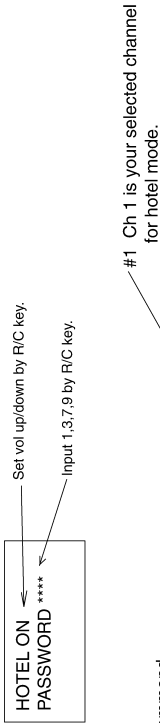
11-1

13-1

GA1 HOTEL MODE APPLICATION

How to enable/disable the "Hotel Mode" ?

- Ans: a) Press the R/C (FUNCTION) {1} key until language selection appear, within five second press the (one/two digit) {2} key and keep pressing it for five second, then you can see the hotel mode with four digits password.
- b) Key in the four digits password starting with number "1", "3", "7", "9", then the hotel mode will be enable, you can switch on/off the hotel mode by using R/C (volume up/down) {3} key.



- * We recommend
Before set the hotel mode, it is better to choose ch 1 & set s-vol level Up to 75% full scale.
After set hotel mode, starting channel will be always ch 1 & maximum sound level out will be set the half of full scale.
- * If you set hotel mode in AV, starting channel will be the last ch which you received before power off (same as normal operation)

CONDITION:

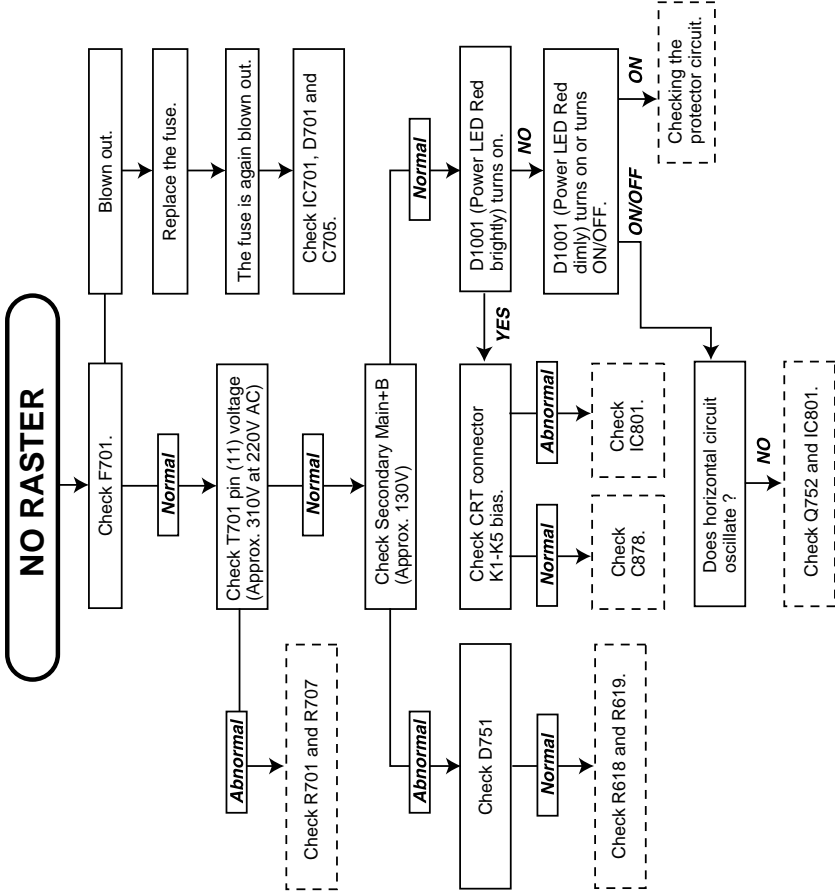
When using hotel mode, user can control "contrast", "brightness", "sharpness" and "tint" function.
But after power off, it will return to the initial setting.

You can't use:--

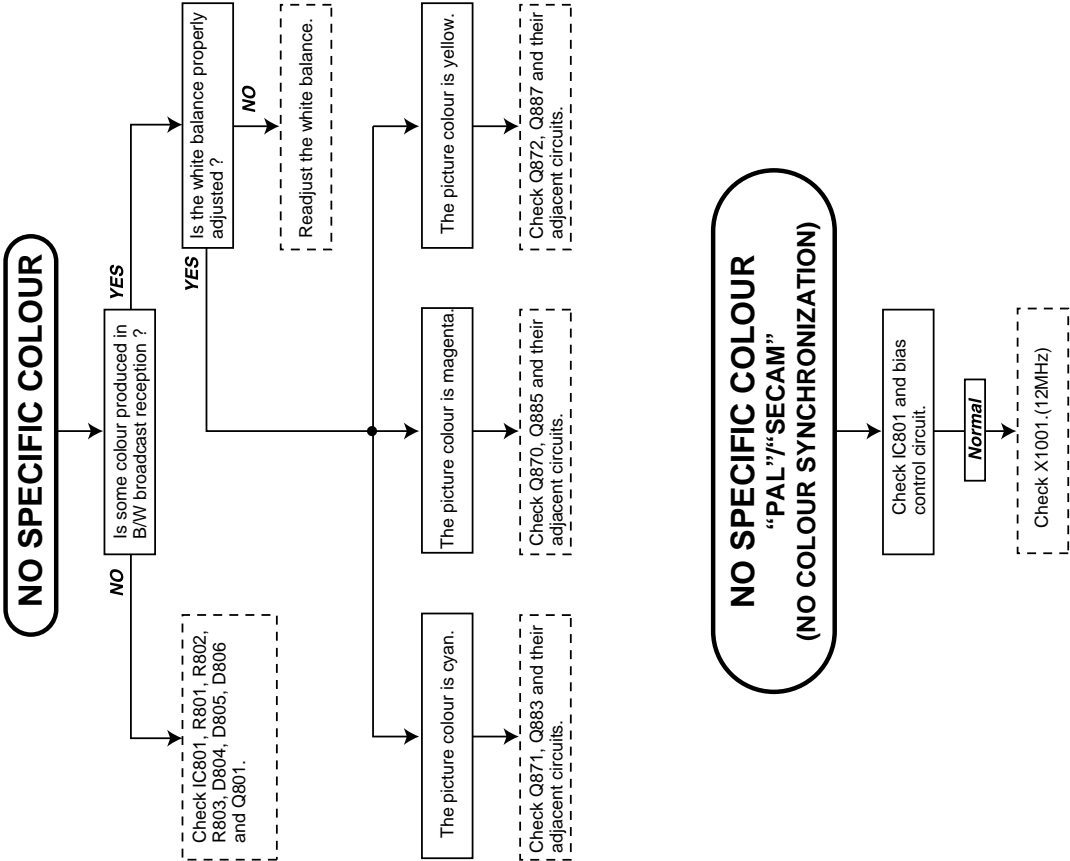
- Preset mode
- Fine tuning
- Skip mode
- System selection

The others function is allowed to be used.

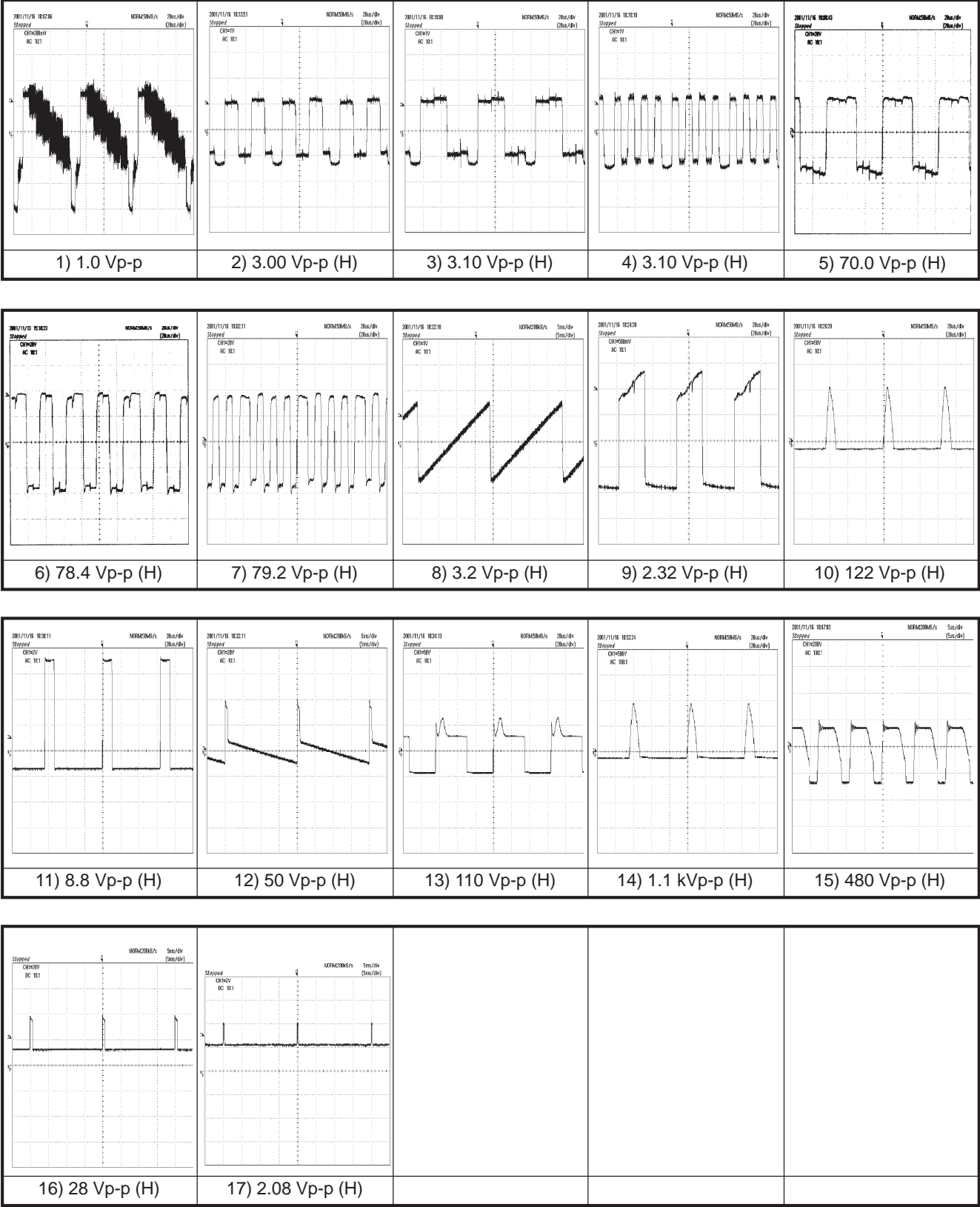
TRUBLE SHOOTING TABLE



TROUBLE SHOOTING TABLE (Continued)

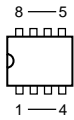


WAVEFORMS

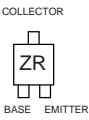


SOLID STATE DEVICE BASE DIAGRAM

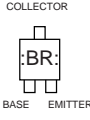
TOP VIEW



CAT24W04
(BR24C04)
(M24C04W)



D601A



B709A

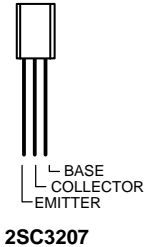


IX3368CE

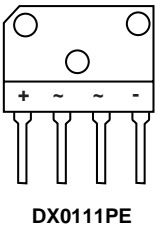
SIDE VIEW



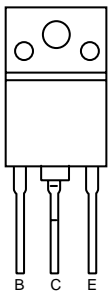
TX0110BM
TX0124BM
2PC1815



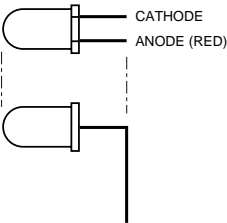
2SC3207



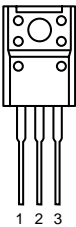
DX0111PE



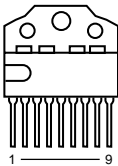
2SD2586



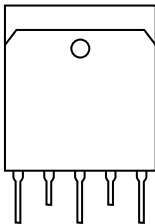
PX0013PE



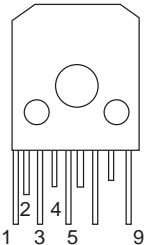
KA7808A



AN7523



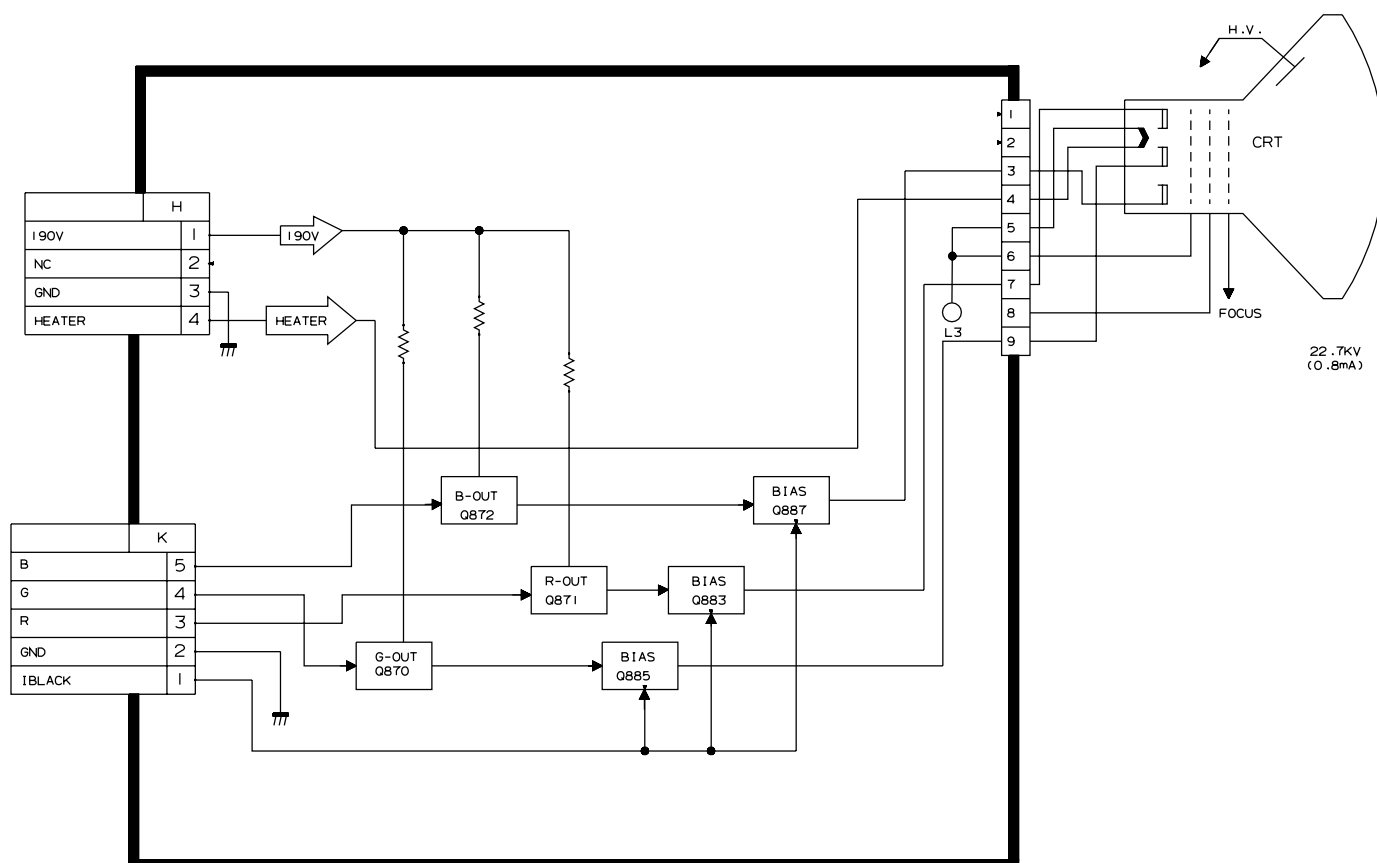
STRG5653



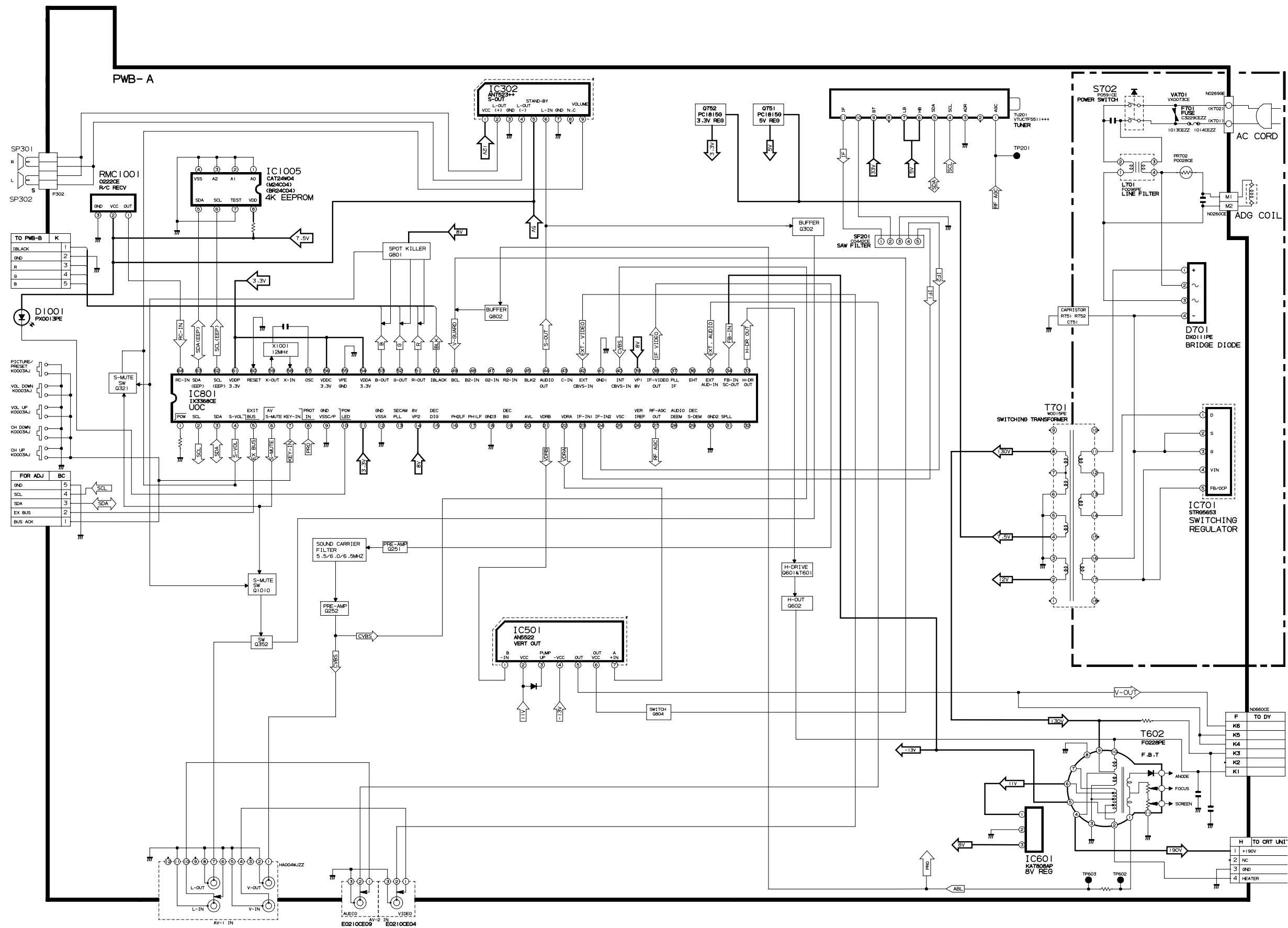
AN5522



BLOCK DIAGRAM:CRT UNIT



BLOCK DIAGRAM:MAIN UNIT





DESCRIPTION OF SCHEMATIC DIAGRAM

SAFETY NOTES:

1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.
2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

IMPORTANT SAFETY NOTICE:

PARTS MARKED WITH "  " () ARE IMPOTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE (— - —) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE.
WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

NOTES:

1. The unit of resistance "ohm" is omitted.
(K = 1000 ohms, M = Mega ohm).
2. All resistors are 1/10 watt, unless otherwise noted.
3. All capacitors are μF , unless otherwise noted. (P = $\mu\mu\text{F}$).

VOLTAGE MEASUREMENT CONDITIONS:

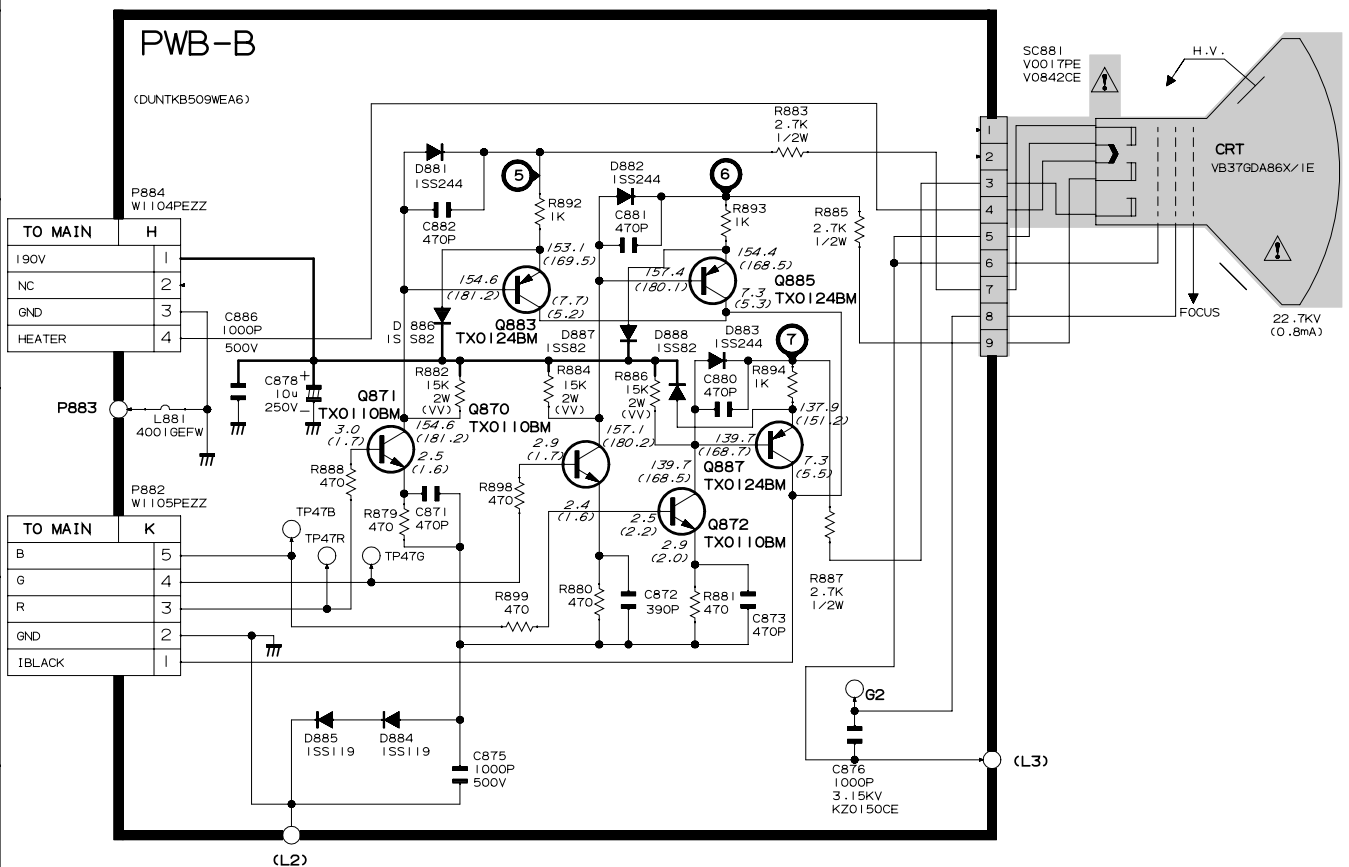
1. Voltages in parenthesis measured with no signal.
2. Voltages without parenthesis measured with 3mV B & W or Colour signal.
3. All the voltages in each point are measured with VTVM.

WAVEFORM MEASUREMENT CONDITIONS:

1. The colour bar generator signal of 2.0V peak applied at of Base Video Buffer Amp. Q252.
2. Approximately 4V AGC bias .

SCHEMATIC DIAGRAM:CRT UNIT

CRT	DY
VB37GDA86X/1E	RC1LH0225PEZZ
VB37OBVBK1S-S/1U-S	RC1LH0220PEZZ
VB34JF090X/MS	RC1LH0220PEZZ
VB34LR090X/MS	RC1LH0220PEZZ
VB34KPU02X/MS	RC1LH0226PEZZ
VB34JLL90X/MS	RC1LH0221PEZZ



SCHEMATIC DIAGRAM:MAIN UNIT

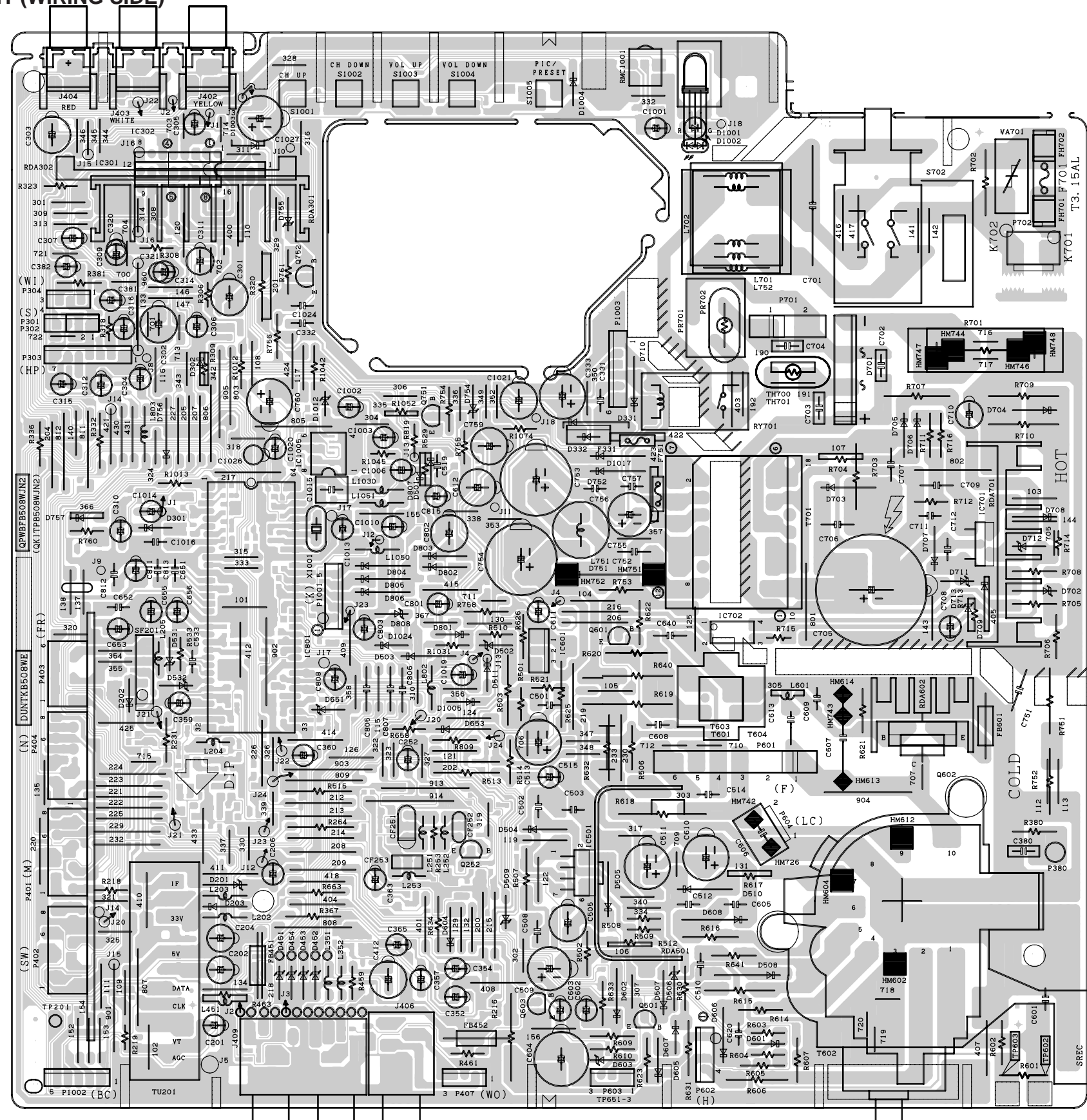
The schematic diagram illustrates the internal circuitry of a main unit, organized into three primary sections: PWB-A, PWB-B, and PWB-C. The diagram is densely packed with electronic components, including integrated circuits (ICs), resistors, capacitors, and connectors, all interconnected by a complex network of lines representing electrical connections.

Key Components and Sections:

- PWB-A:** This section contains the central processing and control logic. It features IC1005 (CAT2404), IC302 (ANT523), and IC801 (IX3368). It also includes a power supply section with a transformer (T1) and a switching regulator (IC701, STR5653). The diagram shows various input and output connectors, including a 15-pin D-sub connector (J1) and a 9-pin D-sub connector (J2).
- PWB-B:** This section is primarily responsible for the power supply and regulation. It includes a transformer (T1), a switching regulator (IC701, STR5653), and a horizontal driver (IC501, AN522). It also shows various capacitors and resistors used for filtering and regulation.
- PWB-C:** This section contains the horizontal driver and other control logic. It features IC501 (AN522) and IC601 (KAT808AP). It also includes various capacitors and resistors used for timing and signal processing.

The diagram is annotated with numerous component values, pin numbers, and reference designators. A note at the bottom right states: "(THIS AREA IS HOT SIDE.)" and "(THIS AREA IS COLD SIDE.)". The diagram is a technical drawing for a specific electronic device, providing a detailed view of its internal circuitry.

PWB-A: MAIN UNIT (WIRING SIDE)





REPLACEMENT PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "△" in the Replacement Parts Lists.

The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |

MARK ★ SPARE PARTS-DELIVERY SECTION.

Ref. No.	Part No.	★	Description	Code
PICTURE TUBE				
△	VB37GDA86X/1E	R	Picture Tube	CB
△ L703	RCiLG0095PEZZ	R	Degaussing Coil	AH
△ DY601	RCiLH0225PEZZ	R	Deflection Yoke	AX
	QEARC1422PEZZ	R	Grounding Strap	AD
	PMAGF3045CEZZ	R	Magnet	AG

PRINTED WIRING BOARD ASSEMBLIES (NOT REPLACEMENT ITEM)

PWB-A	DUNTKB508WEA6	- Main Unit	—
PWB-B	DUNTKB509WEA6	- CRT Unit	—

Ref. No. Part No. ★ Description Code

DUNTKB508WEA6 PWB-A MAIN UNIT

TUNER

NOTE: THE PARTS HERES SHOWN ARE SUPPLIED AS AN ASSEMBLY NOT INDEPENDENTLY.

△ TU201	VTUCTF5511+++	R	Tuner	AZ
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INTEGRATED CIRCUITS

IC302	VHiAN7523+++1	R	AN7523	AH
△ IC501	VHiAN5522+++1	R	AN5522	AH
IC601	VHiKA7808AP-1	R	KIA7808API	AE
IC701	VHiSTRG5653-1	R	STR-G5653	AQ
IC801	RH-iX3368CEN6	R	I.C.	BE
IC1005	VHiCAT24W04-1	R	I.C.	AE

TRANSISTORS

Q251	VS2PD601AR/-1Y	R	2PD601ARY	AB
Q252	VS2PC1815G+-1+	R	2PC1815G+	AC
Q302	VS2PD601AR/-1Y	R	2PD601ARY	AB
Q321	VS2PD601AR/-1Y	R	2PD601ARY	AB
Q352	VS2PD601AR/-1Y	R	2PD601ARY	AB
Q501	VS2PC1815G+-1+	R	2PC1815G+	AC
Q601	VS2SC3207//-1+	R	2SC3207	AC
Q602	VS2SD2586//1E	R	2SD2586	AM
Q603	VS2PC1815G+-1+	R	2PC1815G+	AC
Q751	VS2PC1815G+-1+	R	2PC1815G+	AC
Q752	VS2PC1815G+-1+	R	2PC1815G+	AC
Q801	VS2PB709AR/-1Y	R	2PB709AR	AB
Q802	VS2PB709AR/-1Y	R	2PB709AR	AB
Q804	VS2PD601AR/-1Y	R	2PD601ARY	AB
Q1010	VS2PD601AR/-1Y	R	2PD601ARY	AB

DIODES AND LED'S

D201	RH-EX0676GEZZY	R	Zener Diode	AA
D203	RH-DX0045GEZZY	R	Diode	AA
D301	VHD1SS119//-1Y	R	1SS119	AA
D302	VHD1SS119//-1Y	R	1SS119	AA
D332	RH-DX0445CEZZ	R	Diode	AL
D503	RH-DX0045GEZZY	R	Diode	AA
D505	RH-DX0441CEZZY	R	Diode	AC
D506	RH-EX0630GEZZY	R	Zener Diode	AA
D507	RH-DX0045GEZZY	R	Diode	AA
D508	RH-DX0131CEZZY	R	Diode	AC
D509	RH-EX0660GEZZY	R	Zener Diode	AB
D531	RH-EX0627GEZZY	R	Zener Diode	AA
D532	RH-EX0627GEZZY	R	Zener Diode	AA
D601	RH-DX0048GEZZY	R	Diode	AA
D602	VHD1SS244//-1Y	R	1SS244	AB
D603	RH-EX0667GEZZY	R	Zener Diode	AA
D604	VHD1SS119//-1Y	R	1SS119	AA
D606	RH-DX0131CEZZY	R	Diode	AC
D607	RH-DX0045GEZZY	R	Diode	AA
D608	RH-DX0468CEZZ	R	Diode	AE
D651	RH-EX0627GEZZY	R	Zener Diode	AA
D652	RH-EX0253TAZZY	R	Zener Diode	AC
D653	RH-DX0045GEZZY	R	Diode	AA
D701	RH-DX0111PEZZ	R	Diode	AG
D705	VHD1SS82///1AY	R	1SS82	AC
D706	VHD1SS82///1AY	R	1SS82	AC
D707	VHD1SS82///1AY	R	1SS82	AC
D751	RH-DX0229CEZZ	R	Diode	AF
D752	RH-DX0131CEZZY	R	Diode	AC
D754	RH-EX0616GEZZY	R	Zener Diode	AA
D755	RH-EX0603GEZZY	R	Zener Diode	AA
D801	VHD1SS119//-1Y	R	1SS119	AA
D802	RH-DX0045GEZZY	R	Diode	AA
D803	RH-DX0045GEZZY	R	Diode	AA
D804	RH-DX0045GEZZY	R	Diode	AA
D805	RH-DX0045GEZZY	R	Diode	AA
D806	RH-DX0045GEZZY	R	Diode	AA
D808	RH-EX0610GEZZY	R	Zener Diode	AA
D1001	RH-PX0013PEZZ	R	PhotoDiode	AC
D1003	VHD1SS119//-1Y	R	1SS119	AA
D1004	VHD1SS119//-1Y	R	1SS119	AA
D1007	RH-EX0263TAZZY	R	Zener Diode	AC

14BM2SMK2
14BM2GMK2

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
D1012	RH-EX0611GEZZY	R	Zener Diode	AA	C605	VCKYPA2HB102K+ R	1000p	500V Ceramic	AA
D1018	RH-EX0263TAZZY	R	Zener Diode	AC	C606	VCFPFA2EB334J R	0.33	250V M.Polypro	AD
D1019	RH-EX0263TAZZY	R	Zener Diode	AC	C607	VCFPFD3ZA532H R	5300p	1.8kV/M.Polypro	AD
D1024	VHD1SS119/-1Y	R	1SS119	AA	C608	VCKYPA2HB102K+ R	1000p	500V Ceramic	AA
△ VA701	RH-VX0073CEZZ	R	Varistor	AD	C610	VCEA0A1CW108M R	1000	16V Electrolytic	AD
PACKAGED CIRCUITS					C611	VCEA0A1EW476M+R	47	25V Electrolytic	AB
PR702	RMPTP0028CEZZ	R	Packaged Circuit	AG	C612	VCEA0A1CW477M+R	470	16V Electrolytic	AC
X1001	RCRSB0300CEZZ	R	Crystal	AF	C620	VCKYPA2HB102K+ R	1000p	500V Ceramic	AA
COILS AND TRANSFORMERS					C640	VCFYSB2EB823J R	0.082	250V	AD
CF251	RFILC0318CEZZ	R	Filter	AG	C651	VCQYTA1HM222J+ R	2200p	50V Mylar	AA
CF252	RFILC0465CEZZ	R	Filter	AD	C652	RC-QZA472TAYJ+ R	4700p	50V Mylar	AB
L202	VP-DF270K0000Y	R	Peaking 27μH	AB	C653	VCEA0A1HW105M+R	1	50V Electrolytic	AB
L203	VP-DF270K0000Y	R	Peaking 27μH	AB	C654	VCKYCY1HF223Z R	0.022	50V Ceramic	AB
L251	VP-XF100K0000Y	R	Peaking 10μH	AB	C655	VCEA0A1HW106M+R	10	50V Electrolytic	AB
L252	VP-XF6R8K0000Y	R	Peaking 6.8μH	AB	C656	VCEA0A1HW474M+R	0.47	50V Electrolytic	AB
△ L701	RCiLF0096PEZZ	R	Coil	AF	△ C701	RC-FZ031SCEZZ	R	0.1 275V	AD
L751	RCiLP0225CEZZ	R	Coil	AF	C702	RC-KZ0029CEZZ+ R	0.01	250V Ceramic	AC
L802	VP-DF100K0000Y	R	Peaking 10μH	AB	C703	RC-KZ0029CEZZ+ R	0.01	250V Ceramic	AC
L803	VP-DF100K0000Y	R	Peaking 10μH	AB	C704	RC-KZ0029CEZZ+ R	0.01	250V Ceramic	AC
L1030	VP-DF100K0000Y	R	Peaking 10μH	AB	C705	RC-EZ1286CEZZ	R	Capacitor	AT
L1050	VP-DF100K0000Y	R	Peaking 10μH	AB	C709	RC-KZ0039CEZZ	R	680p 2kV Ceramic	AB
L1051	VP-DF100K0000Y	R	Peaking 10μH	AB	C710	VCEA0A1HW476M+R	47	50V Electrolytic	AB
SF201	RFILC0442CEZZ	R	Filter	AL	C711	VCKYPA1HB102K+ R	1000p	50V Ceramic	AA
△ T601	RTRNZ0144PEZZ	R	Transformer	AE	C712	VCKYPA1HB471K+ R	470p	50V Ceramic	AA
△ T602	RTRNF0228PEZZ	R	H-Volt Transformer	AX	△ C751	RC-KZ0102GEZZ	R	680p AC250V Ceramic	AE
△ T701	RTRNW0015PEZZ	R	Transformer	AL	C752	VCKYPH3DB561K R	560p	2000V Ceramic	AC
CAPACITORS					C753	RC-EZ0776CEZZ	R	100 160V Electrolytic	AF
C201	VCEA0A1CW476M+R	47	16V Electrolytic	AB	C754	RC-EZA069WJZZ	R	33 160V Electrolytic	AE
C202	VCEA0A1AW337M+R	330	10V Electrolytic	AC	C755	VCEA0A1CW108M R	1000	16V Electrolytic	AD
C203	VCKYCY1HF103Z R	0.01	50V Ceramic	AA	C756	RC-QZA103TAYJ+ R	0.01	50V Mylar	AB
C204	VCEA0A0JW477M+R	470	6.3V Electrolytic	AC	C759	VCEA0A0JW477M+ R	470	6.3V Electrolytic	AC
C205	VCKYCY1HF103Z R	0.01	50V Ceramic	AA	C760	VCEA0A0JW228M R	2200	6.3V Electrolytic	AD
C206	VCEA0A1HW106M+R	10	50V Electrolytic	AB	C801	VCEA0A1HW105M+R	1	50V Electrolytic	AB
C231	VCKYCY1HF223Z R	0.022	50V Ceramic	AB	C803	VCEA0A1CW107M+R	100	16V Electrolytic	AC
C232	VCKYCY1HB821K R	820p	50V Ceramic	AA	C804	VCKYCY1HB222K R	2200p	50V Ceramic	AA
C233	VCKYCY1HB472K R	4700p	50V Ceramic	AA	C805	VCKYD41HB102KY R	1000p	50V Ceramic	AA
C234	VCKYCY1EF104Z R	0.1	25V Ceramic	AA	C806	VCKYD41HB102KY R	1000p	50V Ceramic	AA
C251	VCKYCY1HF223Z R	0.022	50V Ceramic	AB	C807	VCKYD41HB102KY R	1000p	50V Ceramic	AA
C252	VCEA0A1CW107M+R	100	16V Electrolytic	AC	C808	VCEA0A1CW107M+R	100	16V Electrolytic	AC
C301	VCEA0A1CW477M+R	470	16V Electrolytic	AC	C809	VCKYCY1CF474Z R	0.47	16V Ceramic	AB
C304	VCEA0A1CW106M+R	10	16V Electrolytic	AB	C810	VCKYCY1CF474Z R	0.47	16V Ceramic	AB
C306	VCEA0A1CW106M+R	10	16V Electrolytic	AB	C811	VCEA0A1CW107M+R	100	16V Electrolytic	AC
C310	VCEA0A1HW105M+R	1	50V Electrolytic	AB	C812	VCFYFA1HA224J+ R	0.22	50V	AB
C311	VCEA0A1HW105M+R	1	50V Electrolytic	AB	C813	VCFYFA1HA224J+ R	0.22	50V	AB
C312	VCEA0A1HW224M+R	0.22	50V Electrolytic	AB	C814	VCKYCY1HB471K R	470p	50V Ceramic	AA
C331	VCKYPA2HB102K+ R	1000p	500V Ceramic	AA	C816	VCKYCY1HB471K R	470p	50V Ceramic	AA
C332	RC-QZA103TAYJ+ R	0.01	50V Mylar	AB	C1001	VCEA0A0JW107M+ R	100	6.3V Electrolytic	AB
C333	VCEA0A1CW108M R	1000	16V Electrolytic	AD	C1002	VCEA0A0JW107M+ R	100	6.3V Electrolytic	AB
C352	VCEA0A1HW105M+R	1	50V Electrolytic	AB	C1003	VCEA0A1CW106M+R	10	16V Electrolytic	AB
C354	VCEA0A1HW105M+R	1	50V Electrolytic	AB	C1004	VCKYCY1CF474Z R	0.47	16V Ceramic	AB
C356	VCKYCY1HB472K R	4700p	50V Ceramic	AA	C1005	VCKYCY1CF474Z R	0.47	16V Ceramic	AB
C359	VCEA0A1CW106M+R	10	16V Electrolytic	AB	C1006	VCEA0A1CW106M+R	10	16V Electrolytic	AB
C360	VCE9GA1HW225M+R	2.2	50V Elect.(N,P)	AB	C1008	VCCCCY1HH330J R	33p	50V Ceramic	AA
C409	VCKYCY1CF474Z R	0.47	16V Ceramic	AB	C1009	VCCCCY1HH330J R	33p	50V Ceramic	AA
C410	VCKYCY1CF474Z R	0.47	16V Ceramic	AB	C1010	VCEA0A0JW107M+ R	100	6.3V Electrolytic	AB
C411	VCKYCY1HB102K R	1000p	50V Ceramic	AA	C1011	VCKYCY1CF474Z R	0.47	16V Ceramic	AB
C412	VCEA0A1CW477M+R	470	16V Electrolytic	AC	C1012	VCKYCY1CF474Z R	0.47	16V Ceramic	AB
C501	VCKYPA1HB102K+ R	1000p	50V Ceramic	AA	C1013	VCEA0A0JW107M+ R	100	6.3V Electrolytic	AB
C504	VCKYCY1HB103K R	0.01	50V Ceramic	AA	C1014	VCEA0A1CW106M+R	10	16V Electrolytic	AB
C505	VCEA0A1HW107M+R	100	50V Electrolytic	AB	C1016	RC-QZA104TAYJ+ R	0.1	50V Mylar	AB
C507	VCKYCY1HB103K R	0.01	50V Ceramic	AA	C1018	VCKYCY1HB221K R	220p	50V Ceramic	AA
C508	VCFYSA1JB224J+ R	0.22	63V	AD	C1019	VCEA0A1HW225M+R	2.2	50V Electrolytic	AB
C509	VCEA0A1CW477M+R	470	16V Electrolytic	AC	C1024	RC-QZA104TAYJ+ R	0.1	50V Mylar	AB
C510	VCKYPA2HB102K+ R	1000p	500V Ceramic	AA	RESISTORS				
C514	VCFYSA1JB563J+ R	0.056	63V	AD	RJ2	VRN-MD2AL000J R	0	1/10W Metal Film	AA
C529	VCKYCY1CB823KY R	0.082	16V Ceramic	AH	RJ8	VRN-MD2AL000J R	0	1/10W Metal Film	AA
C531	VCKYCY1HB102K R	1000p	50V Ceramic	AA	RJ9	VRN-MD2AL000J R	0	1/10W Metal Film	AA
C532	VCKYCY1HB102K R	1000p	50V Ceramic	AA	RJ13	VRN-MD2AL000J R	0	1/10W Metal Film	AA
C533	RC-QZA104TAYJ+ R	0.1	50V Mylar	AB	RJ14	VRN-MD2AL000J R	0	1/10W Metal Film	AA
C601	RC-QZA563TAYJ+ R	0.056	50V Mylar	AB	RJ15	VRN-MD2AL000J R	0	1/10W Metal Film	AA
C602	VCEA0A1HW475M+R	4.7	50V Electrolytic	AB	RJ16	VRN-MD2AL000J R	0	1/10W Metal Film	AA
C603	VCEA0A1HW105M+R	1	50V Electrolytic	AB	RJ17	VRN-MD2AL000J R	0	1/10W Metal Film	AA
C604	VCEA0A2EW106M R	10	250V Electrolytic	AD	RJ18	VRN-MD2AL000J R	0	1/10W Metal Film	AA
					RJ19	VRN-MD2AL000J R	0	1/10W Metal Film	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
RJ24	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R508	VRD-RA2BE153JY	R 15k	1/8W Carbon	AA
RJ26	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R509	VRD-RA2BE153JY	R 15k	1/8W Carbon	AA
RJ28	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R511	VRN-MD2AL181J	R 180	1/10W Metal Film	AA
RJ32	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R512	VRD-RM2HD5R6JY	R 5.6	1/2W Carbon	AA
RJ33	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R521	VRD-RA2BE333JY	R 33k	1/8W Carbon	AA
RJ35	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R529	VRD-RA2BE223JY	R 22k	1/8W Carbon	AA
RJ37	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R530	VRS-CY1JF334JY	R 330k	1/16W Metal Oxide	AA
RJ38	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R531	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
RJ41	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R532	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
RJ42	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R533	VRD-RA2BE393JY	R 39k	1/8W Carbon	AA
RJ43	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R601	VRS-SV2HC102J	R 1k	1/2W Metal Oxide	AA
RJ46	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R602	VRD-RA2BE393JY	R 39k	1/8W Carbon	AA
RJ47	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R603	VRD-RA2BE273JY	R 27k	1/8W Carbon	AA
RJ49	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R604	VRD-RA2BE563JY	R 56k	1/8W Carbon	AA
RJ50	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R605	VRD-RM2HD124JY	R 120k	1/2W Carbon	AA
RJ51	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R606	VRN-VV3AB1R5J	R 1.5	1W Metal Film	AA
RJ52	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R607	VRD-RM2HD270JY	R 27	1/2W Carbon	AA
RJ53	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R609	VRD-RA2BE154JY	R 150k	1/8W Carbon	AA
RJ56	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R610	VRD-RA2BE102GY	R 1k	1/8W 2% Carbon	AB
RJ71	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R611	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA
RJ73	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R612	VRN-MD2AL123J	R 12k	1/10W Metal Film	AA
RJ75	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R613	VRN-MD2AL103J	R 10k	1/10W Metal Film	AA
RJ76	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R614	VRS-SV2HC150J	R 15	1/2W Metal Oxide	AA
RJ77	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R615	VRS-VV3DB682J	R 6.8k	2W Metal Oxide	AA
RJ78	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R616	VRN-VV3ABR47J	R 0.47	1W Metal Film	AA
RJ83	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R618	VRS-VV3DB391J	R 390	2W Metal Oxide	AA
RJ88	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R619	VRS-VV3LB103J	R 10k	3.0W Metal Oxide	AB
R217	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R620	VRS-VV3AB472J	R 4.7k	1W Metal Oxide	AA
R230	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R622	VRD-RA2BE102JY	R 1k	1/8W Carbon	AA
R364	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R623	VRD-RM2HD184JY	R 180k	1/2W Carbon	AA
R366	VRN-MD2AL000J	R 0	1/10W Metal Film	AA	R624	VRN-MD2AL472J	R 4.7k	1/10W Metal Film	AA
RJ10	VRS-CY1JF000JY	R 0	1/16W Metal Oxide	AA	R625	VRN-VV3DB8R2J	R 8.2	2W Metal Film	AB
RJ21	VRS-CY1JF000JY	R 0	1/16W Metal Oxide	AA	R626	VRD-RM2HD470JY	R 47	1/2W Carbon	AA
R201	VRN-MD2AL101J	R 100	1/10W Metal Film	AA	R633	VRD-RA2BE333JY	R 33k	1/8W Carbon	AA
R202	VRN-MD2AL101J	R 100	1/10W Metal Film	AA	R634	VRD-RA2BE103JY	R 10k	1/8W Carbon	AA
R216	VRS-VV3LB223J	R 22k	3.0W Metal Oxide	AB	R641	VRN-SV2HCR47J	R 0.47	1/2W Metal Film	AA
R219	VRD-RA2BE392JY	R 3.9k	1/8W Carbon	AA	R651	VRN-MD2AL223J	R 22k	1/10W Metal Film	AA
R231	VRD-RA2BE681JY	R 680	1/8W Carbon	AA	R652	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA
R232	VRN-MD2AL272J	R 2.7k	1/10W Metal Film	AA	R653	VRN-MD2AL822J	R 8.2k	1/10W Metal Film	AA
R233	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA	R654	VRN-MD2AL273J	R 27k	1/10W Metal Film	AA
R234	VRN-MD2AL391J	R 390	1/10W Metal Film	AA	R655	VRN-MD2AL391J	R 390	1/10W Metal Film	AA
R251	VRN-MD2AL181J	R 180	1/10W Metal Film	AA	R656	VRN-MD2AL100J	R 10	1/10W Metal Film	AA
R252	VRN-MD2AL181J	R 180	1/10W Metal Film	AA	R658	VRD-RA2BE101JY	R 100	1/8W Carbon	AA
R253	VRD-RA2BE680JY	R 68	1/8W Carbon	AA	R663	VRD-RA2BE101JY	R 100	1/8W Carbon	AA
R254	VRN-MD2AL560J	R 56	1/10W Metal Film	AB	R701	VRW-KQ3NC3R9K	R 3.9	7.0W Cement	AE
R255	VRN-MD2AL223J	R 22k	1/10W Metal Film	AA	R707	VRS-VV3DB104J	R 100k	2W Metal Oxide	AB
R256	VRN-MD2AL223J	R 22k	1/10W Metal Film	AA	R708	VRD-RA2BE681JY	R 680	1/8W Carbon	AA
R262	VRN-MD2AL560J	R 56	1/10W Metal Film	AB	R709	VRN-VV3DBR47J	R 0.47	2W Metal Film	AB
R263	VRN-MD2AL560J	R 56	1/10W Metal Film	AB	R710	VRN-VV3DBR47J	R 0.47	2W Metal Film	AB
R301	VRN-MD2AL101J	R 100	1/10W Metal Film	AA	R711	VRD-RA2BE682JY	R 6.8k	1/8W Carbon	AA
R302	VRN-MD2AL101J	R 100	1/10W Metal Film	AA	R712	VRD-RA2BE152JY	R 1.5k	1/8W Carbon	AA
R303	VRN-MD2AL561J	R 560	1/10W Metal Film	AA	R716	VRD-RA2BE562JY	R 5.6k	1/8W Carbon	AA
R304	VRN-MD2AL100J	R 10	1/10W Metal Film	AA	△ R751	VRC-UA2HG825KY	R 8.2M	1/2W Solid	AA
R305	VRN-MD2AL274J	R 270k	1/10W Metal Film	AA	△ R752	VRC-UA2HG825KY	R 8.2M	1/2W Solid	AA
R310	VRN-MD2AL473J	R 47k	1/10W Metal Film	AA	R753	VRD-RM2HD124JY	R 120k	1/2W Carbon	AA
R311	VRN-MD2AL473J	R 47k	1/10W Metal Film	AA	R754	VRD-RM2HD150JY	R 15	1/2W Carbon	AA
R313	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA	R755	VRD-RA2BE221JY	R 220	1/8W Carbon	AA
R314	VRN-MD2AL472J	R 4.7k	1/10W Metal Film	AA	R756	VRD-RM2HD270JY	R 27	1/2W Carbon	AA
R315	VRN-MD2AL272J	R 2.7k	1/10W Metal Film	AA	R757	VRN-MD2AL151J	R 150	1/10W Metal Film	AA
R316	VRN-MD2AL272J	R 2.7k	1/10W Metal Film	AA	R801	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R334	VRN-MD2AL332J	R 3.3k	1/10W Metal Film	AA	R802	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R335	VRS-CY1JF564JY	R 560k	1/16W Metal Oxide	AA	R803	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R352	VRN-MD2AL681J	R 680	1/10W Metal Film	AA	R804	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R359	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA	R805	VRN-MD2AL822J	R 8.2k	1/10W Metal Film	AA
R360	VRN-MD2AL103J	R 10k	1/10W Metal Film	AA	R806	VRN-MD2AL123J	R 12k	1/10W Metal Film	AA
R361	VRN-MD2AL104J	R 100k	1/10W Metal Film	AA	R807	VRN-MD2AL103J	R 10k	1/10W Metal Film	AA
R431	VRN-MD2AL101J	R 100	1/10W Metal Film	AA	R808	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R432	VRN-MD2AL820J	R 82	1/10W Metal Film	AA	R809	VRD-RA2BE224JY	R 220k	1/8W Carbon	AA
R458	VRN-MD2AL103J	R 10k	1/10W Metal Film	AA	R812	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R459	VRD-RA2BE680JY	R 68	1/8W Carbon	AA	R813	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R501	VRD-RA2BE272JY	R 2.7k	1/8W Carbon	AA	R1001	VRN-MD2AL221J	R 220	1/10W Metal Film	AA
R502	VRD-RM2HD102JY	R 1k	1/2W Carbon	AA	R1002	VRN-MD2AL331J	R 330	1/10W Metal Film	AA
R503	VRN-VV3AB2R7J	R 2.7	1W Metal Film	AA	R1003	VRN-MD2AL471J	R 470	1/10W Metal Film	AA
R504	VRN-MD2AL181J	R 180	1/10W Metal Film	AA	R1004	VRN-MD2AL821J	R 820	1/10W Metal Film	AA
R505	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA	R1005	VRN-MD2AL181J	R 180	1/10W Metal Film	AA
R506	VRS-VV3AB331J	R 330	1W Metal Oxide	AA	R1011	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R507	VRN-VV3AB1R0J	R 1	1W Metal Film	AA	R1012	VRD-RA2BE271JY	R 270	1/8W Carbon	AA

14BM2SMK2
14BM2GMK2

Ref. No.	Part No.	★	Description	Code
R1013	VRD-RA2BE101JY	R 100	1/8W Carbon	AA
R1014	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1015	VRN-MD2AL332J	R 3.3k	1/10W Metal Film	AA
R1016	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1017	VRN-MD2AL332J	R 3.3k	1/10W Metal Film	AA
R1019	VRN-MD2AL392J	R 3.9k	1/10W Metal Film	AA
R1020	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1021	VRN-MD2AL153J	R 15k	1/10W Metal Film	AA
R1022	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1023	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1024	VRN-MD2AL122J	R 1.2k	1/10W Metal Film	AA
R1025	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1026	VRN-MD2AL224J	R 220k	1/10W Metal Film	AA
R1028	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1030	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA
R1031	VRD-RA2BE562JY	R 5.6k	1/8W Carbon	AA
R1032	VRN-MD2AL332J	R 3.3k	1/10W Metal Film	AA
R1034	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1035	VRN-MD2AL332J	R 3.3k	1/10W Metal Film	AA
R1036	VRN-MD2AL332J	R 3.3k	1/10W Metal Film	AA
R1037	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1038	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1039	VRN-MD2AL223J	R 22k	1/10W Metal Film	AA
R1040	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1041	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1042	VRD-RA2BE101JY	R 100	1/8W Carbon	AA
R1046	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1048	VRS-CY1JF102JY	R 1k	1/16W Metal Oxide	AA
R1050	VRN-MD2AL392J	R 3.9k	1/10W Metal Film	AA
R1051	VRN-MD2AL683J	R 68k	1/10W Metal Film	AA
R1072	VRN-MD2AL101J	R 100	1/10W Metal Film	AA
R1073	VRN-MD2AL101J	R 100	1/10W Metal Film	AA

SWITCHES

△ S702	QSW-P0591CEZZ	R Switch	AQ
S1001	QSW-K0003AJZZ+	R Switch, CH UP	AB
S1002	QSW-K0003AJZZ+	R Switch, CH DOWN	AB
S1003	QSW-K0003AJZZ+	R Switch, VOL UP	AB
S1004	QSW-K0003AJZZ+	R Switch, VOL DOWN	AB
S1005	QSW-K0003AJZZ+	R Switch, PICTURE/PRESET AB	

MISCELLANEOUS PARTS

△ ACC701	QACCZ2008PEZZ	R AC Cord	AM
△ F701	QFS-C3229CEZZ	R Fuse, T3.15A/250V	AD
FB601	RBLN-0091GEZZY	R Ferrite Bead	AB
△ FH701	QFSDH1013CEZZ+	R Fuse Holder	AC
△ FH702	QFSDH1014CEZZ+	R Fuse Holder	AC
J402	QJAKE0210CE04	R Jack, Video	AC
J403	QJAKE0210CE09	R Jack, Audio	AC
J409	QJAKHA004WJZZ	R Jack, AV-1 IN	AE
P302	QPLGN0461CEZZ	R Plug, 4pin(S)	AB
△ P601	QPLGN0660CEZZ	R Plug, 6pin(F)	AC
P602	LHLDW1104PEZZ	R Holder (H)	AB
P603	QPLGN0341CEZZ	R Plug, 3pin(TP651-3)	AA
P701	QPLGN0260CEZZ	R Plug, 2pin(M)	AC
△ P702	QPLGN0269GEZZ	R Plug, 2pin	AB
P1001	LHLDW1105PEZZ	R Holder (K)	AB
P1002	QPLGN0561CEZZ	R Plug, 5pin(BC)	AB
RDA302	PRDAR0340PEFW	R Heat Sink for IC302	AE
RDA501	PRDAR0118GJFW	R Heat Sink for IC501	AD
RDA701	PRDARA028WJFW	R Heat Sink for IC701	AE
RMC1001	RRMCU0222CEZZ	R Remote Receiver	AL
TP201	QLUGP0102PEZZ	R Lug, Test Point	AA
	LHLDP1066PE00	R Holder	AC

DUNTKB509WEA6
PWB-B:CRT UNIT

TRANSISTORS

Q870	RH-TX0110BMZZ+	R TX0110BM	AC
Q871	RH-TX0110BMZZ+	R TX0110BM	AC
Q872	RH-TX0110BMZZ+	R TX0110BM	AC
Q883	RH-TX0124BMZZ+	R TX0110BM	AC
Q885	RH-TX0124BMZZ+	R TX0110BM	AC
Q887	RH-TX0124BMZZ+	R TX0110BM	AC

Ref. No.	Part No.	★	Description	Code
DIODES				
D881	VHD1SS244//1Y	R 1SS244		AB
D882	VHD1SS244//1Y	R 1SS244		AB
D883	VHD1SS244//1Y	R 1SS244		AB
D884	VHD1SS119//1Y	R 1SS119		AA
D885	VHD1SS119//1Y	R 1SS119		AA
D886	VHD1SS82///1AY	R 1SS82		AC
D887	VHD1SS82///1AY	R 1SS82		AC
D888	VHD1SS82///1AY	R 1SS82		AC

CAPACITORS

C871	VCCCCY1HH471J	R 470p	50V Ceramic	AA
C872	VCCCCY1HH391J	R 390p	50V Ceramic	AA
C873	VCCCCY1HH471J	R 470p	50V Ceramic	AA
C875	VCKYPA2HB102K+	R 1000p	500V Ceramic	AA
C876	RC-KZ0150CEZZ	R 1000p	3.15kV Ceramic	AB
C878	VCEA0A2EW106M+	R 10	250V Electrolytic	AD
C880	VCCCCY1HH471J	R 470p	50V Ceramic	AA
C881	VCKYPA1HB471K+	R 470p	50V Ceramic	AA
C882	VCKYPA1HB471K+	R 470p	50V Ceramic	AA
C886	VCKYPA2HB102K+	R 1000p	500V Ceramic	AA

RESISTORS

R879	VRN-MD2AL471J	R 470	1/10W Metal Film	AA
R880	VRN-MD2AL471J	R 470	1/10W Metal Film	AA
R881	VRN-MD2AL471J	R 470	1/10W Metal Film	AA
R882	VRS-VV3DB153J	R 15k	2W Metal Oxide	AA
R883	VRD-RM2HD272JY	R 2.7k	1/2W Carbon	AA
R884	VRS-VV3DB153J	R 15k	2W Metal Oxide	AA
R885	VRD-RM2HD272JY	R 2.7k	1/2W Carbon	AA
R886	VRS-VV3DB153J	R 15k	2W Metal Oxide	AA
R887	VRD-RM2HD272JY	R 2.7k	1/2W Carbon	AA
R888	VRN-MD2AL471J	R 470	1/10W Metal Film	AA
R892	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA
R893	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA
R894	VRN-MD2AL102J	R 1k	1/10W Metal Film	AA
R898	VRN-MD2AL471J	R 470	1/10W Metal Film	AA
R899	VRN-MD2AL471J	R 470	1/10W Metal Film	AA

MISCELLANEOUS PARTS

△ SC881	QSOCV0017PEZZ	R Socket	AF
P882	LHLDW1105PEZZ	R Holder (K)	AB
P884	LHLDW1104PEZZ	R Holder (H)	AB

Ref. No.	Part No.	★	Description	Code
MISCELLANEOUS PARTS				
SP301	VSP9050PB35WA	R	Speaker	AK
SP302	VSP9050PB35WA	R	Speaker	AK
	QCNW-2380PEZZ	R	Connecting Cord	AG
	QCNW-A293WJZZ	R	Connecting Cord	AC
	QCNW-A343WJZZ	R	Connecting Cord	AC

SUPPLIED ACCESSORIES

ACCESSORIES

TiNS-A414WJZZ	R	Opeation Manual	AU
RRMCG1342PESA	R	Infrared R/C Unit	AC
TMAPCA017WJZZ	R	Circuit Diagram	AC
QANTR0018PEZZ	R	Rod Antenna	AQ
QPLGJ0113CEZZ	R	Antenna Adaptor	AG

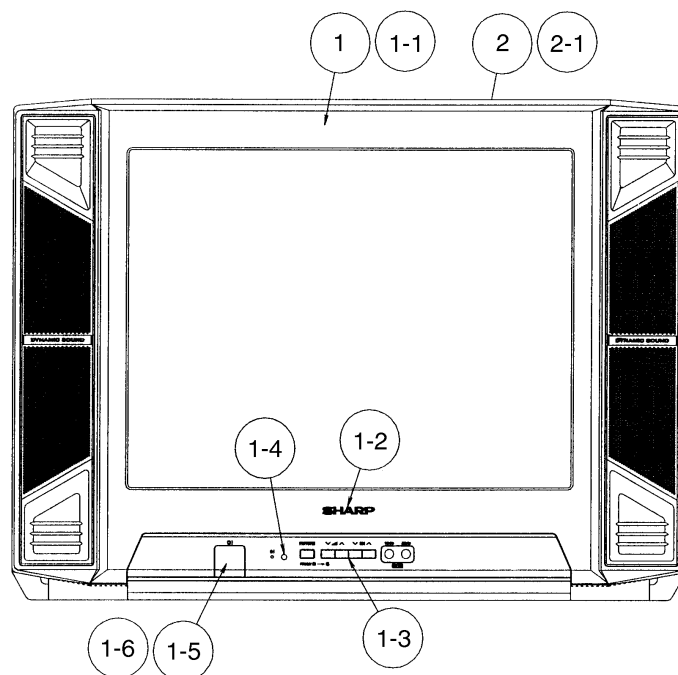
ACCESSORIE(NOT REPLACEMENT ITEM)

TCAUA0002PEZZ	-	Caution Card	—
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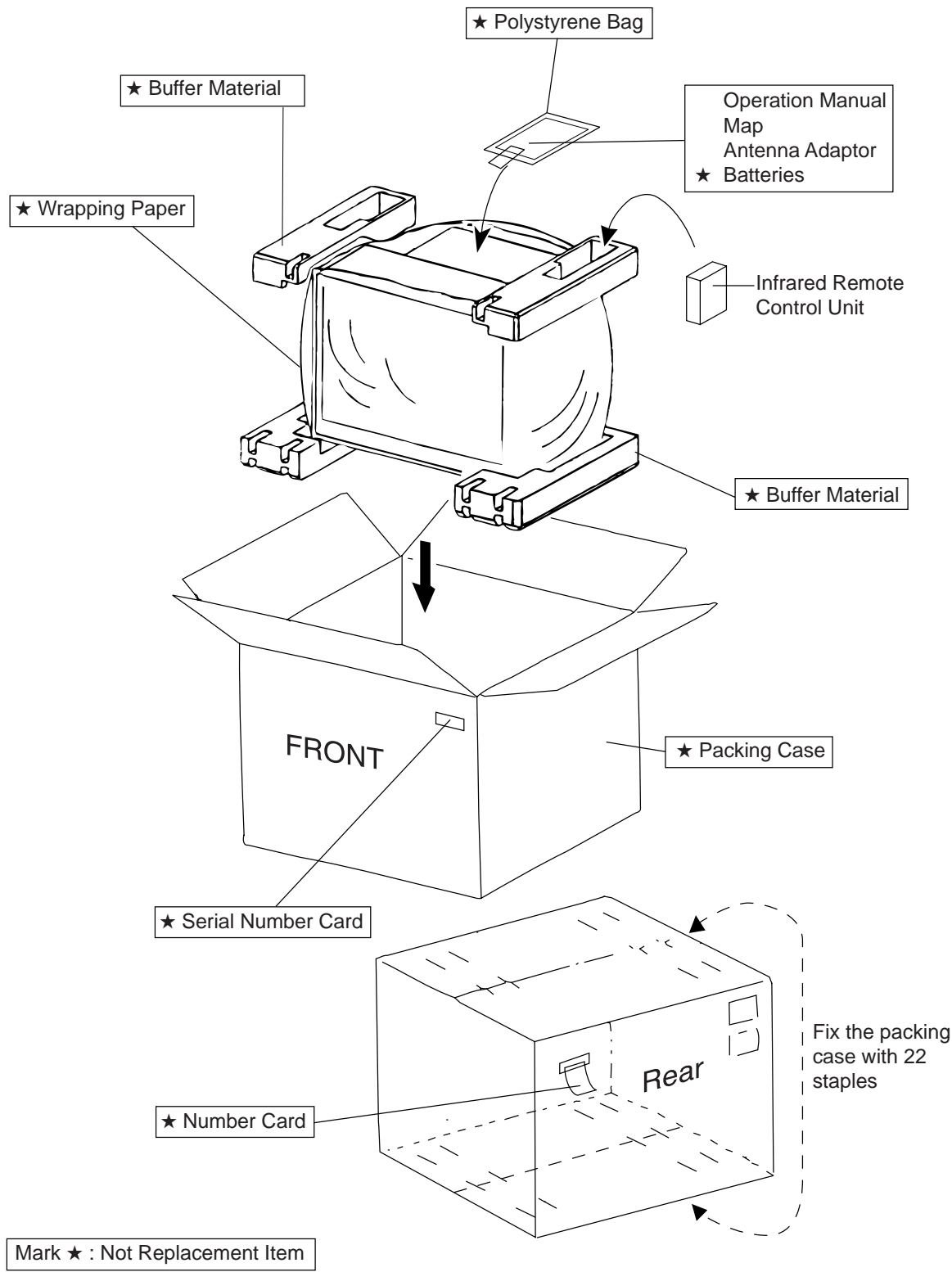
PACKING PARTS (NOT REPLACEMENT ITEM)

SPAKCA354WJZZ	-	Packing Case (14BM2SMK2)	—
SPAKCA355WJZZ	-	Packing Case (14BM2GMK2)	—
SPAKX2755PEZZ	-	Buffer Material	—
SSAKA0031PEZZ	-	Polyethylene Bag	—
SSAKH0015PEZZ	-	Wrapping Paper	—

Ref. No.	Part No.	★	Description	Code
CABINET PARTS				
1	CCABAA171WEV1	R	Front Cabinet Ass'y (14BM2GMK2)	BE
1	CCABAA171WEV0	R	Front Cabinet Ass'y (14BM2SMK2)	BE
1-1	Not Available	-	Front Cabinet	—
1-2	HBDBG0019PESB	R	SHARP Badge	AD
1-3	JBTN-0345PESB	R	Control Button (14BM2GMK2)	AH
1-3	JBTN-0345PESA	R	Control Button (14BM2SMK2)	AH
1-4	HDECQ0186PESA	R	LED/RC Cover	AD
1-5	JBTN-0346PESB	R	Power Button (14BM2GMK2)	AD
1-5	JBTN-0346PESA	R	Power Button (14BM2SMK2)	AD
1-6	MSPRC0068CEFW	R	Power Button Spring	AA
2	CCABBA114WEV0	R	Rear Cabinet Ass'y	AX
2-1	Not Available	-	Rear Cabinet	—



PACKING OF THE SET



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